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ABSTRACT

A traffic safety program consisting of a workshop for parents and the use of special storybooks with their children was effective in reducing 13 preschool children's entries into the street to a rate approximately 10% of that previously observed. The program also increased parents' use of praise and reward for safe play and children's correct identification of photographs depicting safe play, while reducing the rate at which parents reprimanded their children for unsafe play. A multiple-baseline design across subjects was used to assess program effects among the 13 preschool children and their parents who participated in observational and treatment phases of the experimental program. The study involved two conditions: a baseline condition in which behavioral and conceptual data related to play safety were collected and a treatment condition providing workshops for parents and story reading for their children. Through slide-show/lecture, videotapes and behavioral rehearsal, parents were taught ways to improve the safety of their children's play. Children were read storybooks that elicited responses to approximately 25 questions and emphasized safe play. Home-based observations were conducted during the parent workshop and storybook condition. Effects of the intervention were maintained for 5 to 6 months after participation in the study. Upon completion of the study, preliminary estimates of the costs and benefits of dissemination of the materials to all organized day care centers and preschools in the United States were made. (Related materials are included in seven appendices.) (Author/RH)

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Reducing the Risk of Pedestrian Accidents to Preschoolers by Parent Training and Symbolic Modeling for Children: An Experimental Analysis in the Natural Environment

by

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and

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Research Report Number 2 of
the Safe-Playing Project:
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Several people generously devoted their efforts to make this research and subsequent account of it possible. Harriet Shaffer devoted many long hours to training children, arranging observations, and preparing the manuscript. None of what follows could have been done without the talented illustrations by Nancy Ness in the four storybooks. We are indebted to Ruben Murillo, Tina Gardner, Martha Taegel, Cindy Messenhimer, Lynn Hanold, and Gail Spiridigliozzi for hundreds of hours of observation, amid the worst heat wave since the 1930s.

Parents and children participating in this research deserve special thanks. Their willingness to become involved made this study possible.

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D.D.E.

J.L.M.

ABSTRACT

Children enjoy playing outdoors, but playing around traffic leads to pedestrian accidents. This problem has received scant attention from either educators or researchers. The present experiment is the second in a series of studies designed to reveal possible solutions.

After a review of literature on accidents and child development, the research team chose a reduction of children's independent entries into the street as the major goal of the study. The authors offered reasons for choosing modeling and parent training as a package intervention. Using a multiple-baseline across thirteen children, the effects of a parent workshop and children's storybooks were evaluated on the rate of children's entries into the street and parental reinforcement of safe play. The results indicate that the program reduced entries into the street by a factor of 12 and caused parents to reward and praise their children's safe play (an event that almost never occurred during baseline). Combining measures of vehicular traffic and children's rate of entry into streets near their homes, the program reduced children's exposure from 16 occasions per 24 hours of outdoor play to one occasion per 24 hours of play.

Considerations for replication and future research are outlined.

DESCRIPTORS: Pedestrian safety, preschool-aged children, storybooks, imitation, inhibition, research methodology, accident prevention, and parent training.

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"Stay out of the street!" warn parents of young children, and the warning is well founded. Pedestrian-vehicle accidents are the second leading cause of death of young children between the ages of two and four in the United States--killing about 600 children per year (Vital Statistics, 1977, 1979), and such accidents present a similar hazard in other industrialized nations (Petersson, 1977).[1] Thus, streets are dangerous places for preschool-aged children.

How should the danger posed by streets to little children be countered? Two approaches stand out regarding children's behavior. First, children might be taught behaviors related to safe street crossing or entry (e.g., Rothengatter & Brakenhoff-Splinter, 1979). Second, they might be taught to avoid the street, except when acccompanied by an adult (i.e., Embry & Malfetti, 1980). The two approaches arise from different analyses of the same problem.

The first approach might be labeled teaching street crossing, and it has venerable origins. Nursery schools and parents have long drilled children with "Stop at the curb, look both ways, and . . . walk --don't run--across." Examples of this approach are common (e.g., Colborne, 1971; Firth, 1973; Nummenmaa & Syvanen, 1974; Pease & Preston, 1967; Yeaton & Bailey, 1978). The rationale is that since children do cross the street, they should be taught those skills that enable them to cross safely. While appealing, the rationale may be impractical after considering accident circumstances, the pedestrian's task, the developmentally related skills of young children, and the findings of previous research.

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[1] Birth defects are the leading cause of death--killing about 1,000 children each year.

Pedestrian accidents involving preschool-aged children possess a distinctive profile. Such accidents typically occur within a short distance of home (Grayson, 1975; Hoshi, 1976) and away from intersections (Accident Facts, 1977; Buhlman, Warren, & Simpson, 1979; Pedestrian Safety Report, Undated; Read, 1969; Yaksich, Note 1). The children involved had been playing alone or with friends or had been engaged in some fantasy play that took them into the street (Buhlman et al.,1979; Grayson, 1975; Read, 1969). Often, the child just dashed into the street (Hoshi, 1976; Snyder & Knoblauch, 1971). In a majority of cases, the driver could not have avoided the accident (Baker, Robertson, & O'Neill, 1974; Buhlman et al., 1979; Read, 1969), probably because the child ran so suddenly into the street (Grayson, 1975; Hoshi, 1976). A pedestrian accident involving preschoolers may be characterized thus: Being unable to avoid the accident, the driver struck a child who was likely playing and, in play, ran into a residential street.

Another fact worth noting is that in 25-33% of the cases, the children were accompanied by a parent or another adult (Grayson, 1975; Hoshi, 1976). The child apparently "escaped the control" of the adult (Grayson, 1975).

Crossing the street is physically easy, but crossing safely is psychologically complicated. One must stop at the boundary of the street or edge of parked cars, look in one direction, scan for approaching vehicles (i.e., detect motion, ascertain movement toward or away from one's self, and estimate time of arrival--which is mediated by figure-ground discrimination, distance/depth cues, relative size of vehicle, velocity, and acceleration-deceleration), look the other direction, and repeat all these operations, while remembering the results of the previous operations. The safe-crossing task can be complicated further by traffic signals and turning cars.

Crossing safely taxes a preschooler's psychological abilities. The often noted preschooler's impulsiveness and difficulty dicriminating left and right pose obvious problems for safe crossing. The more complicated task of judging the "safety gap" (the margin for error) in traffic likely is beyond the capacity of young children. Consider the evidence for age-related trends.

Finlayson (1972) reported that kindergartners stopped and looked less frequently than older children while crossing streets on the way to school. Furthermore, they typically ran across the road. She argues that 5-year-old children are typically deficient in street-crossing skills, a contention supported by data indicating that they are disproportionately involved in crossing accidents on the way to or from school (e.g., Buhlman et al., 1977). These deficiencies might result from inadequate training (cf. Yeaton & Bailey, 1978) or from immature development. The latter seems more probable. Evaluating cues associated with assessing the available time to cross in the face of oncoming cars poses the most serious problem for preschoolers.

First, children must consider the distance of vehicles, yet they may be fooled by illusion. The larger of two similar objects will generally be perceived as being closer, while objects of the same size will appear to be the same distance away (e.g., Ittelson, 1951; Zeigler & Leibrowitz, 1957). Thus, vehicle size (which adults often recall from memory--viz., Hondas are known to be smaller than Cadillacs) may confound the distance judgments of young children.

Second, children must assess vehicular velocity. Salvatore (1973) demonstrated that vehicle size and auditory cues affect velocity judgments and may override visual velocity cues, when perceived by elementary-school children. He noted that miles-per-hour was not understood by younger children, suggesting that speed as distance per unit of time is a difficult concept for them. Laboratory research by Siegler and Richards (1979) reinforces Salvatore's conclusions. They reported that 5-year-olds equate the concepts of time, speed, and distance.

Commenting on his recent velocity-time-distance research, Wilkening observed that 5-year-olds overestimate the time that a slow object needs for short distances and that a fast one needs for long distances (in press; Note 2). Educational research by Yeaton and Bailey (1978) also reveals the same difficulty: Children made most of their mistakes on "Watching-Vehicle-Distance" when crossing a designated "generalization" street. Given the difficulty that primary-school children have with judging time, speed, and distance, one may conclude that preschool-age children will be even less likely to master these concepts well enough to cross the street safely.

Time, speed, and distance are specific concepts required to judge when it is safe to cross; general cognitive skills are necessary, too. One must be able to process a number of environmental cues simultaneously, sort relevant from irrelevant, store and retrieve information in short-term memory, and recall information from long-term memory. When compared to older children or adults, younger children fall short on these general skills.

Stimulus overselectivity, or centration (as Piaget refers to it), is a well-documented characteristic of preschool-aged children. When confronted with a discrimination task, children tend to focus on one attribute to the exclusion of others, often making impulsive decisions (e.g., Eimas, 1969; Hartley, 1976; Katz, 1971; Pick, Christy, & Frankel, 1972; Schilmoeller & Etzel, 1977; Stella & Etzel, Note 3). Thus, the preschooler attempting to decide about crossing might focus on speed--ignoring distance, turn signals, acceleration, etc.--and, then, dash into the street.

Overselectivity or centration puts children at a distinct disadvantage when engaged in two or more tasks simultaneously--e.g., heeding a mother's call to come home, riding a bigwheel,[2] and crossing the street. Coote (1976) reported the results of an experiment showing performance decrements when 5-year-olds are required to engage in two tasks simultaneously, one of which involved an element of risk (much like crossing the street).

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[2] Bigwheels are a type of low-slung, injection-molded plastic tricycle, which is popular in the United States.

Processing the environmental cues related to street crossing requires logical operations, which in turn involve classical set theory: "Cross only when there are no cars, or they are a long way off." In 1972, Feldman conducted an extensive investigation of children's understanding of such operations. He reported that the understanding of negation evolves slowly with age, and argued that negation is more than semantics--it involves cognitive operations that are poorly understood by preschoolers. He noted that "either-or" is the most difficult concept of all.

Processing relevant environmental cues eventually involves memory, and preschoolers have difficulties in short-term memory (e.g., Goodman, 1972; Haith, 1971; Sheingold, 1973)--particularly as the quantity and diversity of incoming information increases. This latter problem seems to be related to children's inability to sort out salient cues (Belmont & Butterfield, 1971).

Attributes related to the Piagetian preoperational stage provide further insight into the cognitive deficiencies of preschoolers related to crossing the street safely. First, much of preschoolers' thinking can be characterized by animism; that is, they believe most moving things are living, including cars (Brainerd, 1978; pp. 108-109, 119-122). Second, artificialism pervades their thinking (all things are "made the way people make them," which results in an inability to comprehend accidents or chance per se (Brainerd, 1978, p. 107). Third, they appear to lack an understanding of projective and Euclidean spatial concepts (Brainerd, 1978, pp. 188-189), which figure into the judgment of safe crossing when both traffic and the child are moving. Fourth, children's judgments of distance are often swayed by topographical features (Jackson, Robinson, Dale, 1977, pp. 62-63), which might precipitate errors caused by parked cars or nearby buildings (mass), hilly or curved roads, or heat mirages that tend to make vehicles appear further away. Given the combination of the preoperational stage and the tasks required, preschool children lack what Piaget describes as developmental readiness for learning to cross the street safely.

Available evidence suggests that young children lack the relevant cognitive skills required to make valid and consistent judgments about crossing the street safely. Since these skills are age related and frequently involve conservation operations (in the Piagetian sense), probably only a few children could be trained in the required skills, and even then with no assurance of generalization across settings, people, or tasks (e.g., Jackson, et al., 1977, pp. 53-57).

The functional aspects of crossing the street safely (e.g., assessing vehicle speed) overtax most preschoolers, although most can probably learn the topographical behaviors related to street crossing (e.g., stopping at the curb, looking both ways--Rothengatter & Brackenhoff-Splinter, 1979). Yet only the functional behaviors (viz., estimating safety gap) will appreciably insure the safety of the child. Thus, teaching the topographical behaviors alone might decrease the child's safety. Adding to the risk are adult supervisors or drivers who might assume that the child understands enough to act safely; and supposing this, the adults might suspend their caution--thereby increasing the likelihood of an accident. The dangers of topographical solutions (i.e., painted crosswalks or bicycle rodeos) to traffic-safety problems have been documented (Herms, 1972; Kueting, Boigs, & Winkler, 1978; Risk & Raymond, 1976). In the same way, teaching preschoolers to cross the street could result in more accidents, not fewer.

If preschoolers cannot reliably be taught to cross the street, then they must be taught to avoid the street--except when accompanied by an adult. Teaching children to play outdoors on the grass, the sidewalk, or the ground rather than in the street should improve their safety, if the accident profiles (reported earlier) reasonably represent the risks taken by young children around traffic. The grass, the sidewalk, and the ground are boundaries of safe play. Teaching children to observe these boundaries behaviorally would mean that the children had been taught to cope with the traffic environment within their psychological limits: The children would be behaving safely.

The notion of teaching boundaries should not be confused with constructing barriers. Children can be isolated from the traffic environment by physical means (viz., fences or vehicle-free communities). Physical isolation may increase safety, but it does not teach safety. Once out of such an isolated environment, the child may behave unsafely through lack of training or knowledge. Thus, physical barriers do not teach a child to cope; they only protect.

The boundary hypothesis presumes changing children's behavior. The hypothesis does not, however, automatically suggest how the behavior change is to be accomplished. The literature on changing children's behavior recommends two methods: modeling and parent training.

Embry and Malfetti (1980) conducted a multiple-baseline experiment across preschool children who were exposed to special storyboooks that modeled the virtues of playing on the grass or sidewalk but not the street. The children were observed repeatedly in settings close to their homes. The results indicated that the modeling experience resulted in a temporary reduction in the frequency that children entered the street. Other data collected implied that parents' use of praise, reprimands, and time-out (a brief punishment procedure) was a powerful mediator of children's safe/unsafe behavior--a finding systematically replicated by Rothengatter (Note 4). Embry and Malfetti confirmed the positive impact of symbolic models on teaching the observance of safe boundaries, but they also discovered that symbolic models were insufficient for longer-term behavior change-- a finding that contrasts to some modeling research in the classroom (e.g., Jakibchuk & Smeriglio, 1976) and modeling research on traffic education with older children (i.e., Dueker, 1975).

Parent training vis-a-vis parent education has emerged as an outgrowth of behavioral psychology. Parent training focuses on changing parents' behavior; parent education focuses on changing parents' attitudes or knowledge. Parent training typically focuses on increasing parental attention to desirable child behavior, reducing parental attention to undesirable child behavior, giving clear instructions, and using nonphysical means of punishment (e.g., Herbert & Baer, 1976; Patterson, Ray, & Cobb, 1973). By contrast, parent education focuses on teaching parents about stages of child development or behavior, typically with no clear behavioral objectives for parents (e.g., Gesell, 1940; White, 1975). The effectiveness of parent training on parent-child interactions is well documented (e.g., L. Embry, Kelley, Herbert-Jackson, & Baer, 1978; Forehand, 1978; Riner & Budd, Note 5).

Parent training can focus either on general parent-child interactions (e.g., L. Embry, et al., 1978; Riner & Budd, Note 5) or on specific child-management problems (e.g., riding in car seats--Christophersen & Gyuley, 1979; mealtime problems--Sloane, 1976; and toilet training-- Azrin & Foxx, 1974). Global positive changes in parent-child interactions appear to require home-based feedback from the parent therapist/educator (L. Embry et al., 1978). Some research, however, indicates that parent-training packages focusing on specific problems can be effective in changing both parent and child behavior (Clark, Greene, Macrae, McNees, Davis, & Risely, 1977), although some specific problems (viz., toilet training using the Azrin & Foxx procedure) may be beyond the abilities of most parents (Lutzker & Drake, Note 6). Thus, parent-training packages focusing on a single target behavior show considerable but not unlimited promise.

Pedestrian-vehicle accidents involving preschool-aged children pose a serious threat to the health and welfare of children, their families, and drivers (who are likely to seek mental-health treatment as a result of involvement in a fatal accident--Foeckler, Garrand, Williams, Thomas, & Jones, 1978). Only a few scientific studies have been conducted on ways to reduce this danger (viz., Embry & Malfetti, 1980; Gunter & Limbourg, 1976). The available evidence suggests that children's safety would best be served by teaching _them_ to avoid the street except when accompanied by an adult; teaching preschoolers to cross the street alone might well decrease their relative safety. Symbolic modeling and parent-training appear to be the best means of teaching children to observe safe boundaries when playing outdoors, each procedure having a separate contribution but interacting synergistically (L. Embry, Note 8; Issacs, Note 7; Kelley, L. Embry, & Baer, 1979). With these facts in mind, the authors undertook the present study to evaluate the combined effects of symbolic modeling and parent training on the rate of children's entries into the street while playing outdoors near their own homes.

METHOD

Subjects

Thirteen preschool-aged children and their parents participated in the observational phase of the program, and another 20 preschool-aged children and their parents participated in the program but were not observed. All but three children were enrolled at a university affiliated program, which offered both day-care and preschool programs. Two children who were not enrolled at the center were S15 and S9, "Abby" and "Al" from a previous experiment (Embry & Malfetti, 1980); S7 was enrolled at another day-care center and was referred to participate. Table 1 gives the ages of the observed ($\overline{X}$ = 3 years, 9 months) and the nonobserved ($\overline{X}$ = 4 years, 6 months) children. Family participation was solicited by a letter (or by phone in three cases), mailed to those parents whose children were currently participating in less than two research projects (a policy limitation imposed by the staff of the university program). A total of 53 was sent out, and 28 families agreed to participate. Appendix A contains sample letter.

All of the children observed appeared to have at least normal intelligence, though several evidenced some behavior problems. S7 appeared to be 4 to 6 months behind normal in language development. S8 was being treated for speech articulation difficulties. S4 and S13 exhibited considerable aggression toward adults and peers, though only S4 was receiving any professional assistance in this regard at the time of the study. In the nonobserved group, five children (S25, S28, S29, S31, and S32) were enrolled in classrooms for children with special problems (viz., mental retardation, developmental delay, or behavior problems).

Table 2 gives the current occupations of the participating parents. White-collar occupations predominated, reflecting the community in which the research was conducted.

Participating families were divided into observed and non-observed subjects on the basis of one of two factors: (a) the family had participated in the Practical Parenting Class offered at the University, or (b) initial baseline observations revealed a zero or near-zero rate of entry into the street (S6 was an exception to this, because she typically had run two to four blocks away from home, two times a day for the previous 6 weeks). Parents (and their children) who had participated in the Practical Parenting Class were assigned to the pool of nonobserved subjects, because they had learned effective child-management techniques (L. Embry et al., 1978) and because a previous study had indicated that such parents might spontaneously apply those skills to managing their children's safety around traffic (Embry & Malfetti, 1980). Children with zero or near-zero baseline rates of entry into the street were switched to the nonobserved participates, because little if any experimental control over the child's behavior could be demonstrated as a result of participation. Thus, 13 children were observed in both baseline and treatment, though a total of 33 children and their parents participated in the study.

Table 1

Observed and Non Observed Participating Children by Sex, Age, and Special Characteristics

Group	Subjects	Sex	Age	Special Characteristics
Observed	S1	F	3 years, 7 months	none
	S2	M	3 years, 8 months	none
	S3	M	4 years, 5 months	none
	S4	M	3 years, 11 months	aggressive toward adults and peers
	S5	F	3 years, 2 months	none
	S6	F	3 years, 8 months	none
	S7	F	3 years, 4 months	language delay
	S8	M	4 years, 2 months	receiving speech therapy
	S9	M	3 years, 8 months	none
	S10	F	3 years, 0 months	none
	S11	F	4 years, 6 months	none
	S12	M	4 years, 11 months	none
	S13	M	5 years, 3 months	aggressive toward adults
Nonobserved	S14	F	4 years, 11 months	none
	S15	F	3 years, 4 months	none
	S16	F	3 years, 4 months	none
	S17	M	5 years, 6 months	none
	S18	F	4 years, 2 months	none
	S19	M	4 years, 9 months	English not native languag
	S20	M	4 years, 0 months	none
	S21	M	3 years, 7 months	none
	S22	M	4 years, 6 months	none
	S23	M	3 years, 8 months	none
	S24	F	4 years, 11 months	none
	S25	F	5 years, 11 months	Down's syndrome
	S26	F	3 years, 2 months	none
	S27	M	4 years, 9 months	none
	S28	M	5 years, 6 months	developmental delay
	S29	M	7 years, 9 months	mentally retarded, cogenital deformities
	S30	F	5 years, 10 months	none
	S31	M	4 years, 1 months	emotionally disturbed
	S32	M	5 years, 8 months	learning disabled
	S33	M	3 years, 6 months	none

Note: The following children are siblings: S10 and S11, S23 and S24, S25 and S26, S29 and S30, and S32 and S33.

Table 2

Occupational Status of Participating Parents

Child	Mother	Father
S1	homemaker	scientist
S2	apartment manager	builder
S3	travel agent	paramedic
S4	homemaker	athletic coach
S5	government clerk	auto mechanic
S6	homemaker	insurance agent
S7	secretary	(divorced)
S8	homemaker	professor
S9	homemaker	student
S10	homemaker	administrator
S11	homemaker	administrator
S12	homemaker	construction worker
S13	retail clerk	professor
S14	homemaker	executive
S15	nurse	student
S16	factory worker	student
S17	physical therapist	professor
S18	homemaker	student
S19	homemaker	student
S20	homemaker	businessman
S21	secretary	factory worker
S22	homemaker	administrator
S23	teacher	scientist
S24	teacher	scientist
S25	systems analyst	administrator
S26	systems analyst	administrator
S27	homemaker	factory technician
S28	homemaker+	(divorced)
S29	cook	factory worker
S30	cook	factory worker
S31	homemaker	engineer
S32	homemaker	executive
S33	homemaker	executive

+Supported by Aid to Dependent Mothers and Children.

Settings

The study involved two settings for each subject: a training site and an observation site. Both parents and children were trained at a preschool and observed at their home.

Parents attended a workshop, held in a conference room at a university building housing the child-care center. Temporary child care was provided in a nearby room, if the child wasn't in school at the time.

Children were taken individually to a small room to hear storybooks read by trainers. A low table and several child-sized chairs were the only furniture in the room.

Observational home sites varied greatly. Table 3 lists the type of housing and vehicular traffic density near each dwelling. About 70% of the children lived in single-family homes. The highest rate of vehicles per hour around a home was 227, the low 7.

Table 3

Observed Families' Type of Housing and Density of Vehicular Traffic Near Dwelling

Subject	Housing Type	Vehicular Traffic per Hour[1]
S1	apartment complex	7*
S2	apartment complex	14**
S3	single family residence	39
S4	single family residence	20
S5	single family residence	7
S6	single family residence	20
S7	triplex	227*
S8	single family residence	14
S9	apartment complex	125**
S10	single family residence	16
S11	single family residence	16
S12	single family residence	28
S13	single family residence	11

[1] Observers counted traffic during weekdays from 5-6 p.m. Only those vehicles directly passing in front of the residence were counted.

*Dwelling adjacent to more than one street or private drive that serves through traffic.

**Private drive serving all residents.

Materials

Parents who attended the special workshop were exposed to a number of materials: a slide show, a poster for home, a videotape, a handout on using sticker charts and Sit and Watch (a punishment procedure), and some other miscellaneous items.

Materials for parents. The 16-slide presentation was narrated live by the first author and focused on the facts about pedestrian-child accidents and children's difficulty in coping with traffic. It also provided the rationale for teaching young children to play safely by avoiding the street rather than teaching them to cross it.

Parents received a poster that briefly outlined the steps of the program:

ASK - "Ask if your child is going to play safely. . ."
TIMER - "Set a timer to help you be consistent. . ."
PRAISE - "Praise your child for playing safely. . ."
REWARD - "Reward your child's safe play. . ."
SIT & WATCH- "If your child goes into the street alone make your child Sit and Watch for 3-5 minutes. . ."
TEACH - "Hold your child's hand and ask when it's safe to cross. . ."

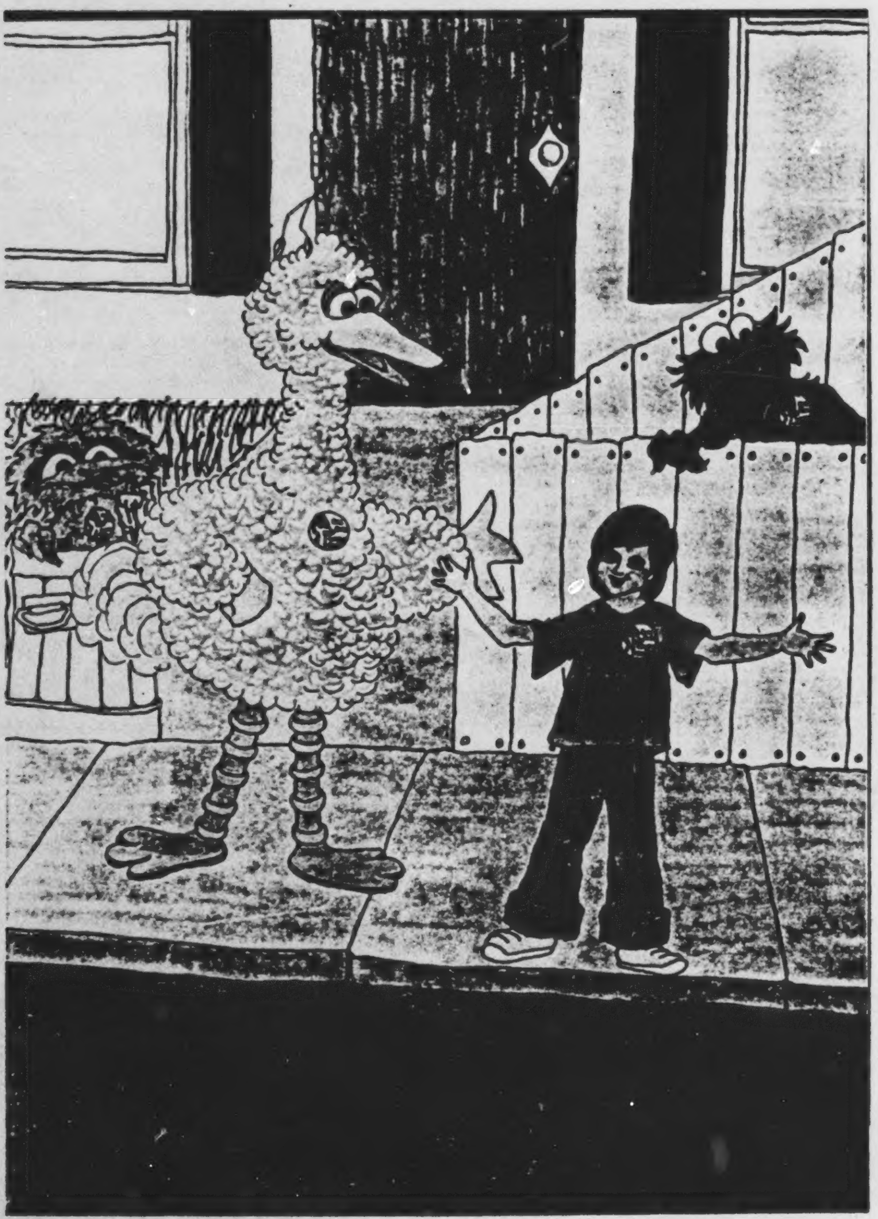
It was recommended that the Poster (Appendix B) be put on the refrigerator at home.

During the workshop, parents saw a videotape, showing a parent and child implementing the various steps of the program. The parent demonstrated how to set boundaries for safe play, to ask about the child's intention to play safely, to praise and use stickers as rewards, and to use Sit and Watch as punishment. The videotape either showed the action directly or was narrated in the first person by the parent. A script of the video tape is presented in Appendix C.

Parents received a handout on using sticker charts and Sit and Watch (a punishment procedure also known as Time Out). Appendix D contains both handouts, adapted from materials published by L. Embry and Kelley (1979). The parent's packet included a number of additional items: sticker charts for use at home, stickers, two self-adhesive labels with question marks printed on them (designed to be placed near outside doors to remind parents to ask about their child's intention to play safely), and a form for recording possible rewards for safe play. Appendix E contains these items.

Figure 1

Facsimile of Sample Illustration from Storybooks



Materials for children. Children were read four storybooks emphasizing playing safely near traffic, whose effects had been previously studied (Embry & Malfetti, 1980). All storybooks were illustrated, often with characters from Sesame Street.[3] The main character of the storybooks was an androgynous character, whose name was always that of the listening child. Figure 1 shows a page taken from one of the storybooks. The features of these four storybooks have been described extensively elsewhere (Embry & Malfetti, 1980).[4]

In addition to the four storybooks, four loose-leaf binders were prepared, each with 33 pairs of photographs. These were called generalization probes. Each binder held 33 photographs of a child playing safely (e.g., the sidewalk, a patio, the grass, a driveway, inside a garage) and 33 more of a child playing unsafely (viz., in the street in a variety of circumstances with a variety of play objects or, in a few cases, in extreme potential hazard--a skateboard about to enter the street). One safe and one unsafe picture appeared on each page, with the order, placement, and pairing randomized within the binders. The order of the bound probes (Probe 1, Probe 2, etc.) was randomly determined by drawing probe numbers out of a hat.

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[3] The authors gratefully acknowledge permission by Children's Television Workshop and Jim Henson Associates, Inc. to use Muppet characters.

[4] Persons interested in the availability of the storybooks used in this research should contact the first author for details.

Data Collection

Data were collected on both children and parents. At home observation sites, observers recorded children's entries into the street and certain parent-child interactions. At school, records were made of children's responses to questions about the special storybooks and to safety-concept probes.

Home-based data. Six University of Kansas students and the first author served as observers for this study. Observers underwent 10-15 hours of training in preparation for the study. First, they were given the observation protocol, which was followed by a quiz. Second, they discussed the application of the code to videotaped segments of a child playing outdoors. Third, they practiced using the code with videotaped sessions of children and parents emitting the various behaviors. Fourth, they practiced the code in the natural environment with a parent and child who acted out the various behaviors. Fifth, observers practiced the code with some of the actual families. After the training sessions, regular observations with participating families were scheduled.

Observers were instructed not to provide feedback about how well the child or parent was doing. Such feedback would have threatened both the validity and generality of the findings, given the results of other research (viz., L. Embry at al., 1978).

A research assistant made appointments with parents to observe their children playing outdoors, usually at times reflecting each child's everyday schedule and preference for playing outdoors. Depending on the family, these appointments occurred during the morning, early afternoon, or before and after dinner. Time conflicts (for families or observers), children's illnesses, holidays, and the weather occasionally altered these schedules. Each observation lasted 30 minutes.

The procedure was the same for all observations. Once the child was outdoors, the observer counted and recorded on a data sheet the number of children, including the target child, within a 360-degree view. The observer then turned on a micro-cassette recorder that emitted a beep every 10 seconds and a double beep every 60 seconds. At the end of every 10 seconds, the observer(s) recorded the following behaviors of the child and parent:

1. Child Indoors. If the child had both feet inside the house for an entire interval, then the child was recorded as being indoors.

2. Child Safe. If the child played outdoors for any part of an interval and did not enter the street, then the child was recorded as being "safe."

3. Child Entering the Street With Feet. If during an interval, the child placed one or both feet in the street or gutter, the observer(s) coded that behavior. A street was defined as surface on which motorized traffic regularly traveled (viz., a two-lane road, an alley, or a parking lot). Driveways at single-family homes were not defined as streets.

4. Child Entering Street on Wheeled Toy. If during an interval a child played with a wheeled toy (e.g., bigwheel, tricycle, or bicycle)

that subsequently touched the street with one or more of its contiguous parts or the child touched the street while using the toy, the observers noted the child as having entered the street with a wheeled toy.

5. Child Continuing In the Street. If the child continued to be in the street after a subsequent beep, his or her behavior was so recorded.

6. Child in Time Out. If the parent gave a Time Out instruction and the child went to the place designated by the parent, the observers coded the first full interval in the Time Out area and subsequent intervals thereafter until the first full interval that the child left the area.

7. Parent Indoors. If one or both the parent's feet were inside of the door threshold, the parent was recorded as being indoors.

8. Parent Outdoors. If the parent had both feet on the outside of a door threshold, the parent was coded as being outdoors. The code made no discriminations between mother or father so that it was possible for both parents to be outside or for the mother, then the father, etc. being recorded as parent outdoors. In practice, however, the data reflect supervision by mothers, not fathers.

9. Parental Reprimands. If the parent reprimanded the child during an interval about playing in the street or instructed the child not to play in the street, the observers recorded such verbal interactions between parent and child.

10. Parental Praise. If the parent complimented the child for playing safely (e.g., on the sidewalk) or gave the child some reward for playing safely (e.g., a sticker or a treat) during an interval, the observers recorded the interaction.

11. Parental Use of Punishment. If the parent used force (pulling, pushing, squeezing hard, or hitting) as a consequence for a child's play in the street during an interval, the observers coded this force as punishment.

12. Time-Out Instruction. If the parent instructed the child that he or she had to go inside or sit on the steps, etc. for a period of time as a consequence of going into the street, the observers coded this event as a Time-Out Instruction. (Time Out is a procedure commonly prescribed for inappropriate child behavior in the behaviorally based parent-training literature).

At the end of the observation, the observer(s) noted again the number of children playing outdoors. Appendix F contains both the observation protocol and an actual data sheet.

Interobserver reliability checks were made 78 times during the course of the study, scheduled so that all possible pairs of observers were matched. Additionally, the first author made unscheduled reliability checks with each observer and, occasionally, with other pairs of observers conducting reliability observations. Reliability observations were conducted on each child during both baseline and intervention.

Estimates of interobserver agreement on the occurrence of the various behaviors were calculated. Estimates of nonoccurrence reliability were not computed, because the behaviors in question occurred infrequently (thereby maximizing the probability of chance agreement on nonoccurrence), or because the reciprocals of the behavior were also coded (e.g., parent indoors versus parent outdoors).

Reliability estimates were computed one of three ways, depending on the behavior in question. For four behaviors (Child Indoors, Child Safe, Parent Indoors, and Parent Present), reliability estimates were calculated in the following manner: (a) an agreement between observers was counted if both scored the identical symbol in the same 10-second interval; (b) a disagreement was counted if both observers failed to score the same symbol in a given interval; and (c) estimates of interobserver agreement were calculated by session using the formula,

$$\frac{\text{Agreements}}{\text{Agreements + Disagreements}} \text{ X } 100 = \begin{array}{l}\text{Percentage of 10-second}\\ \text{Intervals agreed Upon}\end{array}$$

Table 4 presents reliability estimates, averaged across sessions, for Child Indoors, Child Safe, Parent Indoors, and Parent Present. The mean estimates ranged from 91% to 99%.

A 10-second sliding rule was used for counting agreements for all other behaviors, that occurred infrequently. That is, an agreement was counted if both observers coded the occurrence of a behavior in the same or the immediately adjacent 10-second interval. Since ambient outdoor noise and different visual perspectives exacerbated the normal difficulties of reliability checks involving low-rate behaviors, the 10-second sliding rule provided a demanding but somewhat flexible criterion.

Table 5 contains reliability estimates (using the above formula) on rates of entry into the street plus continued play in the street. Mean reliabilities were 82% (entering street with feet), 93% (entering street with wheeled toy), and 90% (continuing in the street).

Table 6 offers reliability estimates for the remaining observed behaviors, all of which occurred infrequently. Reliability estimates were computed by adding up agreements and disagreements across home visits, followed by the use of the previously described formula. Mean reliabilities were not computed, because the behaviors occurred infrequently during and across observations. A mean score could thus be skewed by a single low reliability. Using this protocol, reliability estimates were 100% (Child in Time-Out), 74% (Parental Reprimands), 100% (Parental Punishment), 100% (Time-Out Instruction), and 71% (Parental Praise).

All data sheets were counted twice, by different research assistants. Across all categories of behavior, counting reliability averaged 98.7%.

Table 4

Interobserver Reliability Estimates for Child and Parent Behaviors Using Interval-by-Interval Counting Rule[1]

Behavior	Cases[2]	Range		Mean Reliability
		Lo	Hi	
child indoors	60	50%	100%	91%
child safe	78	95%	100%	99%
parent indoors	70	81%	100%	98%
parent present	62	72%	100%	97%

[1] Agreement counted only if exact match by each 10-second interval.

[2] Number of home visits during which one or both observers recorded the behavior, involving a reliability check.

Table 5

Interobserver Reliability Estimates for Unsafe Child Behaviors[1]

Behavior	Cases[2]	Range Lo	Range Hi	Mean Reliability
child entering street by foot	16	0%	100%	82%
child entering street by wheeled toy	9	67%	100%	93%
child continuing to be present in the street	17	57%	100%	90%

[1] Agreements counted using a 10-second sliding rule.

[2] Number of home visits during which one or both of the observers recorded the behavior.

Table 6

Interobserver Reliability Estimates for Low-Rate Observed Child and Parent Behaviors

Behavior	Cases[1]	Agreements	Disagreements	Percentages of Agreement
child in time out	1	1	0	100%
parents' use of punishment	2	2	0	100%
parental reprimand	12	17	6	74%
parental praise	15	110	43	72%
time-out instruction	1	1	0	100%

[1] Number of home visits during which one or both observers recorded the behavior.

School-based data. The investigators tested children's concept of safe and unsafe play, using the previously described generalization probes. On viewing a pair of photos (one of a child playing in the street, another of a child not doing so), the child was asked to touch the picture of the child playing safely.[5] Children were not praised for correct responses but for their hard work, because praise was known to teach the task directly so that it would be impossible to ascribe any change induced by the storybooks alone. One baseline probe was given, as was (typically) one post storybook probe. If a child failed to show any change on the initial post storybook probe, additional reinforced probes were given in an attempt to discover if the child could learn the task--a procedure that clarified whether the lack of impact resulted from the nature of the child or the ineffectiveness of the storybooks *per se*. The trainers noted each response by the child on a data sheet devised for each probe.

Generalization probes were not given frequently, because Horner and Baer (1978) have noted that some repeated measures conducted in multiple-baseline designs (as used herein) are reactive. The authors felt that the long, boring, and unreinforced probes would be just such reactive measures if given frequently. The authors also predicted that many exposures to this ancillary measure might have adversely affected children's reactions to the storybooks, to the parent workshop procedures, and to the trainers.

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[5] An analysis of errors indicated that children consistently tended to classify bicycle riding in the street as safe, which is interesting in light of the growing deaths attributable to bicycle-vehicle accidents among this age group.

Split-half reliability on all probes given was computed. Across all children, split-half reliability was: 87% (SD of ±13%).

Experimental Procedures

Children and their parents encountered two conditions: baseline, and parent workshop plus storybooks. For the observed families, both behavioral and conceptual data were collected in both conditions. For nonobserved families, only conceptual data were collected in both. Baseline preceded the workshop and storybooks.

Baseline.

The first author and a number of research assistants collected both behavioral and conceptual data during the initial condition. They recorded the safety-related behaviors of children and parents among the observed families, and one of the assistants obtained safety-concept data on the children just before the reading of the storybooks. Another research assistant obtained concept data from the children of nonobserved families. No scheduled intervention took place during baseline.

Parent workshop plus storybooks.

Five equivalent workshops were scheduled at different times: one in the morning, one in the afternoon, and three in the evening. Child care at and transportation to the workshop were available to any parent needing such services. The different workshop times and proffered services facilitated participation by both fathers and mothers (Cantor & Chabrow, 1972; Chisholm, 1972; Miller & Wilmshurst, 1975; Swift, 1968). Parents chose which workshop to attend.

Parents came to a conference room after taking any accompanying children to a specially set up child-care room (for those parents whose children were not being cared for otherwise). Both parents and children were greeted and given name tags by the first author. Parents were given a package of materials to examine and offered refreshments while waiting for the workshop to begin. Once all the registered parents were there, the workshop began.

The workshop was divided into several segments: (a) introduction of parents and guests; (b) statement of the objectives of workshop and safe-playing program; (c) brief overview of workshop activities; (d) slide-show/lecture about children and traffic--viz., numbers of accidents, the accident situation, and the abilities of preschool-aged children to cope with traffic; (e) overview of tactics to be used to teach safe playing; (f) videotape of a parent implementing the program; (g) behavioral rehearsal in using descriptive praise for safe playing; (h) behavioral rehearsal in selecting rewards for safe playing; (i) behavioral rehearsal in using Sit and Watch (also known as Time Out) for those times the child might violate parents' boundaries for safe play; (j) a videotape on teaching a child some of the skills related to learning how to cross the street safely; and (k) closing comments. The workshop was to project a certain style: relaxed, but smoothly run, open to parent-to-parent and/or parent-to-leader interchange but safe from parent monologues, praise for good parent contributions but not obsequiously so, and humor appropriate to the context. The style was chosen to reflect the literature on effective group meetings for parents (e.g., Barnes, 1978; Cantor & Chabrow, 1972; Coletta, 1977; Honig, 1975;

Miller & Wilmshurst, 1975; Swift, 1968). Appendix G contains a transcript of one of the workshops, which provides the details of both the content and style of the workshops.

While parents participated in the workshop, their children heard the special storybooks emphasizing safe play. If the parents brought their children with them to the workshop for child care, then those children heard two of the storybooks at that time and the other two storybooks at another time. If not, the children heard the storybooks at other times at preschool or at home (if scheduling problems arose or while children were on break between semesters). The storybooks were read to children individually by one of two trainers.

Each of the storybooks contained approximately 25 questions, which were posed to the child by the trainer. The trainer vigorously and descriptively praised correct responses and recorded all answers on specially devised data sheets. After a storybook session, children were awarded a "Big Bird Safety Club" button, which was depicted in the storybooks.

After hearing all the storybooks, each child was again given the safe-playing concept probe. Children were praised for their hard work but not for their correct answers. Trainers recorded each child's answers.

Home-based observations continued to be scheduled with appropriate families during the parent workshop and storybook condition. Observers were instructed not to provide any feedback about how well the parents might be implementing the program.

Experimental Design

The effects of the parents' workshop and children's storybooks were evaluated experimentally through a multiple-baseline design across subjects, an experimental design that has been described extensively (e.g., Baer, Wolf, & Risley, 1968; Hersen & Barlow, 1976; Kratochwill, 1978). The multiple-baseline design was chosen for both practical and scientific reasons. First, the number of subjects required to demonostrate experimental control is much smaller than for comparable group designs (Kazdin, 1980, pp. 104-105), thereby minimizing the expense of the study. Second, differences (or lack thereof) in outdoor behavior between conditions as measured once per child (a posttests-only group design) or twice per child (pre- and posttest group design) might have been an artifact of intrasubject variability: Preliminary observations of children playing outdoors had revealed considerable intrasubject variability, such that repeated measures (like those found in the multiple-baseline design) were necessary to assure accurate and representative data about behavior recorded during baseline and intervention--especially if the effects of the intervention were transient. Third, a spectrum of other variables is known or thought to affect the pedestrian-related behaviors of children; these variables included maturation, exposure to school, number of peers interacting with the target child outdoors, play objects available to the target child, daily weather conditions, month of the year, and time of sunset. A group or time-series design with an intervention fixed in time confounds the intervention with "time of testing" variables, which may be as powerful as or more powerful than the intervention itself. The multiple-baseline design ameliorates this difficulty through sequential interventions across subjects at different times (Kazdin, 1980, p. 177). Fourth, a well-constructed group design vitiates any conclusions about individual behavior (Hersen & Barlow, 1976; Sidman, 1960). Thus, some children going through the program might have shown improvements while others might have become much worse; yet the central tendency as described by statistical operations might have shown an overall improvement. If a program were then widely implemented on the basis of the descriptive statistics, that program might have disastrous consequences for a significant subgroup of children. A multiple-baseline design, however, allows precise knowledge about individual effects, and generality of effects to groups may be inferred to the degree to which systematic replications (parallel to a factorial design but with greater economy--Hersen & Barlow, 1976, p. 57) are achieved across heterogeneous subjects, training settings, intervention agents, and so forth (which is similar to the logical process that is used to describe the generality results from most group designs).

RESULTS

Figures 2, 3, and 4 show the children's rates of entry into the street and their parents' praising of safe behavior, during both baseline and the experimental condition.

Figure 2 concerns children having a high baseline rate of entries into the street, which was defined as two or more observations of 10 or more entries per hour. During baseline, the children represented in Figure 2 averaged 9.7 entries into the street per hour. Following the parent workshop and special storybooks, they averaged 0.7 entries per hour, only 7% of the baseline rate. Some of these children were observed being placed in time out for unsafe play, as indicated by observations with inverted triangles. During baseline, parents praised four intervals of safe play; after the workshop, they praised a total of 130 intervals, 33 times more than the baseline rate. Reduced entries into the street continued throughout the intervention phase.

Figure 3 applies to children having a low baseline rate of entries into the street, which was defined as observations with one or no occurrences of 10 entries per hour. During baseline, these children averaged 1.8 entries into the street per hour. After the workshop and storybooks, they averaged 0.2 entries per hour, 10% of the baseline rate. The absolute rate of entry into the street following intervention declined for this group of children, although their change from baseline was not quite as great. All but one parent was observed to praise and/or reward safe playing following the workshop (a total of 190 intervals praised); whereas no parent was observed to do so during baseline. Children continued to avoid the street throughout the observations during the intervention phase.

Figure 2

Observed Children with High-Level Baseline Entries into the Street

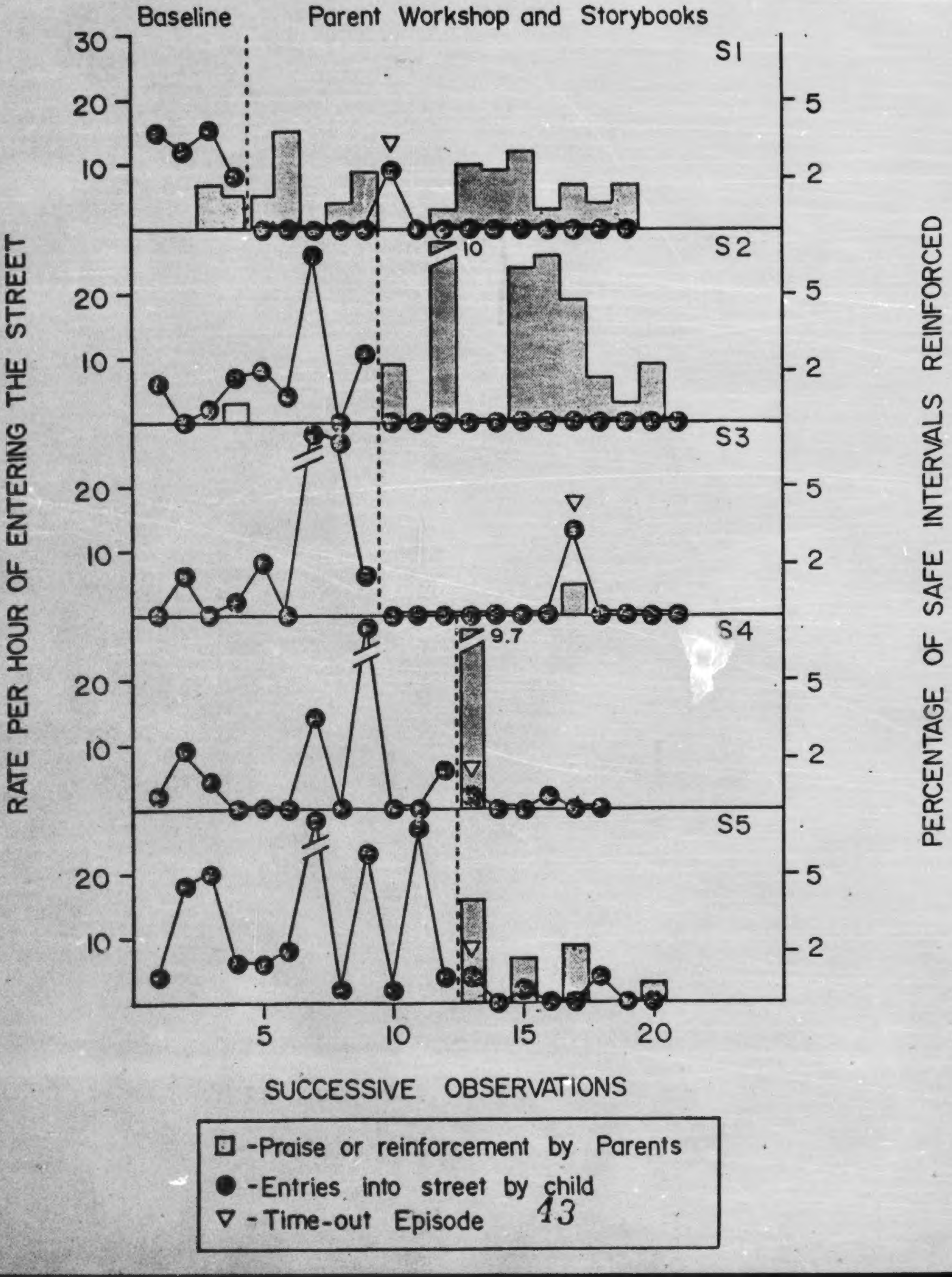
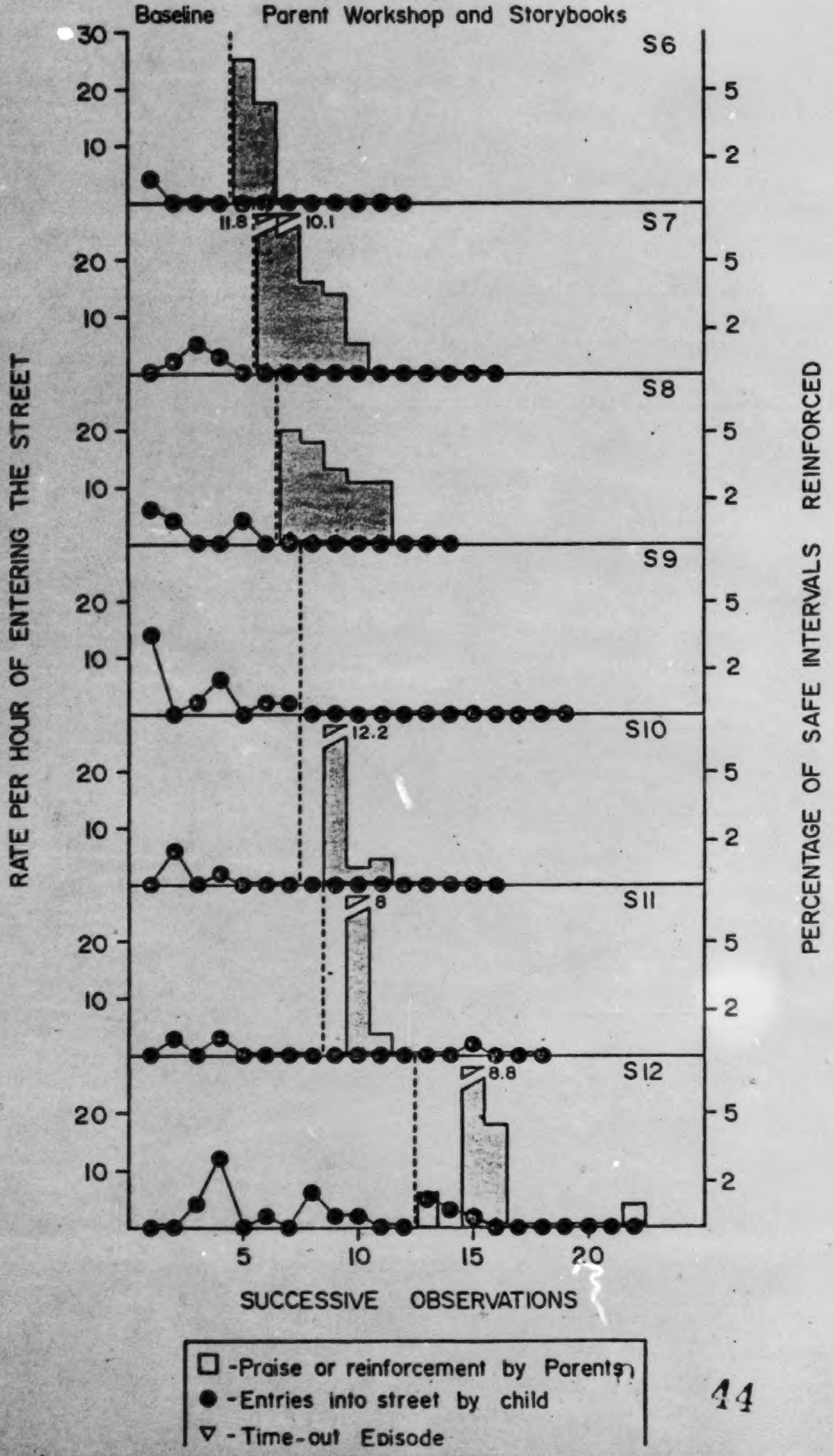


Figure 3

Observed Children with Low-Level Baseline Entries into the Street



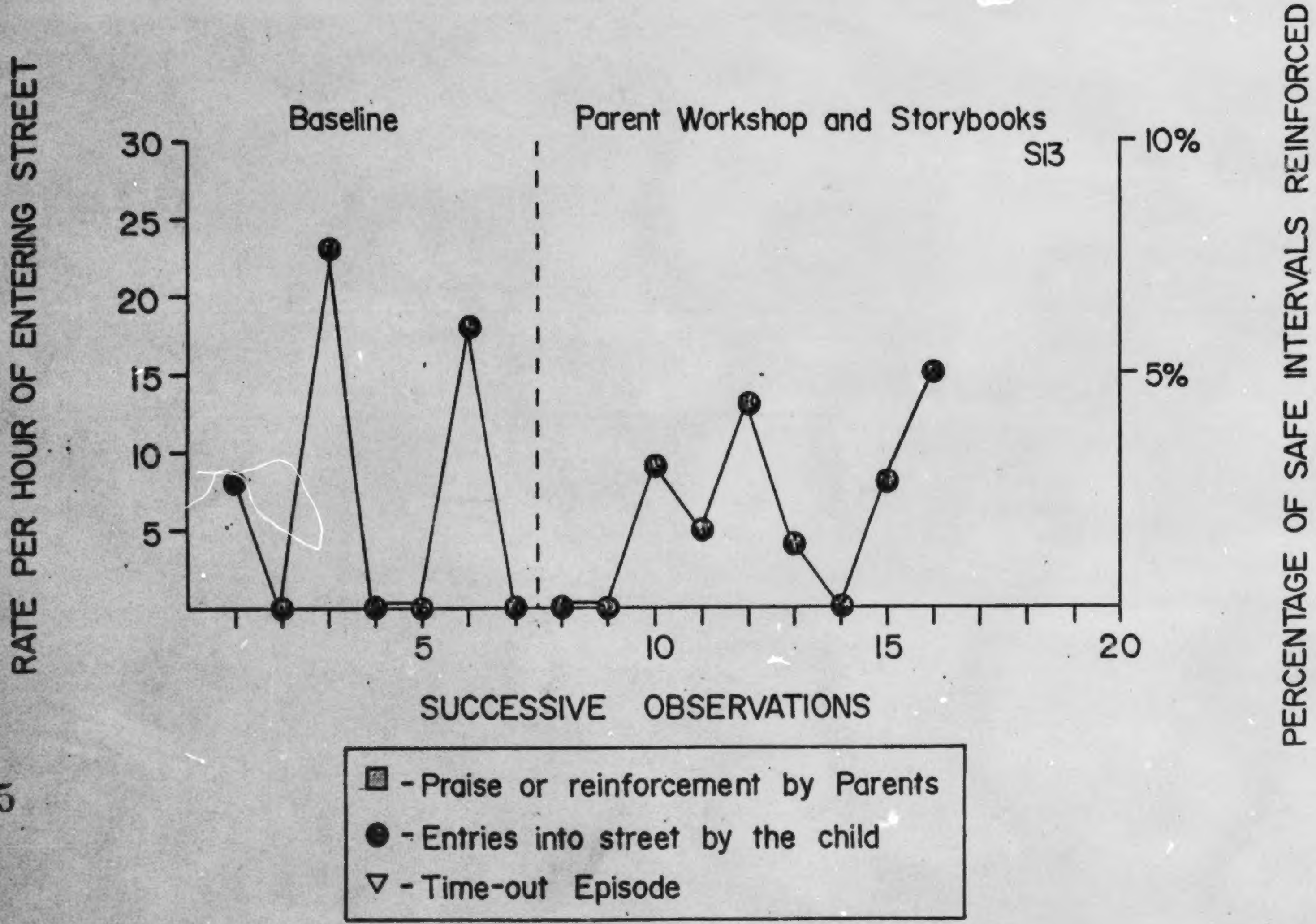


Figure 4

Observed Child Whose Parents Failed to Implement Program

Figure 4 describes the one child who failed to show any sustained improvement following the workshop and storybooks. Anecdotal evidence, parent report, and direct observation indicated that the parent failed to implement any portion of the program at home.

Table 7 reveals the average number of reprimands given by parents to their children during both conditions. Following intervention, four parents increased their number of reprimands, two did not change, and seven decreased. Across all parents, an average of 1.6 reprimands was given per observation during baseline; an average of 0.5 was given during intervention.

Table 8 shows the percentage of intervals observed during which the parents were outdoors, which is a rough index of the amount of time during which a parent would have had an opportunity to supervise a child. During baseline, the parents remained outdoors during 31% of the intervals. Following the workshop and storybooks, they increased their average outdoor time to 45% of the observed intervals. Nine sets of parents actually increased their average time outdoors after intervention; while four other sets of parents were outdoors less and less.

Figure 5 presents data on observed children's correct responses to safety-concept probes and to questions imbedded in the individual storybooks. These children answered 89% of the imbedded questions correctly. During baseline, the mean number of correct responses to the generalization probes was 58%. After the intervention, the mean number of correct responses increased to 72% on the first postintervention probe. Eight children improved on the first postintervention probe, one stayed the same, and four declined. Reinforcement of correct responses improved the performance of those children who failed to show initial improvement on the first postintervention probe.

Table 7

Average Number of Parental Reprimands per Observation by Child by Condition

Child	Baseline $\overline{X}$	Parent Workshop + Storybooks $\overline{X}$
S1	10.3	2.5
S2	2.8	0.4
S3	0.4	0.8
S4	0.9	0.5
S5	0.0	0.8
S6	2.8	0.0
S7	0.6	0.0
S8	0.7	0.0
S9	2.3	0.0
S10	0.0	0.0
S11	0.0	1.2
S12	0.0	0.3
S13	0.0	0.0
COMBINED AVERAGE	1.6	0.5

TABLE 8

PARENT PRESENCE AS PERCENTAGE OF OBSERVED INTERVALS ACROSS CONDITIONS

	SUCCESSIVE OBSERVATIONS																							
	(Baseline)											(Workshops and Storybooks)												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	$\bar{X}$ Baseline	$\bar{X}$ Storybooks
CHILD:																								
S1 -	100	100	100	100	90	100	100	100	100	100	100	100	100	100	100	100	95	97	99				100	99
S2 -	73	4	45	82	67	21	39	26	45	53	50	72	36	22	95	88	100	75	72	75	100		45	62
S3 -	15	59	1	0	12	4	41	3	0	20	17	37	2	18	0	10	25	0	17	0	24		15	14
S4 -	75	100	8	16	31	2	2	95	55	4	20	49	100	100	55	69	96	80					38	83
S5 -	100	7	0	3	5	96	0	0	12	9	1	28	100	0	40	0	42	7	66	63			22	40
S6 -	13	0	3	8	16	29	16	2	11	0	0	0	0										8	7
S7 -	97	27	29	0	14	44	37	45	39	100	38	18	86	46	87								33	54
S8 -	56	66	66	100	94	43	100	100	87	96	79	100	100	100									71	95
S9 -	100	17	0	0	17	0	6	0	0	7	70	0	1	71	11	20	26	0	17				20	19
S10 -	37	2	43	19	0	11	7	6	99	26	35	34	51	26	35	12							17	26
S11 -	40	2	12	16	0	11	3	6	4	94	32	15	0	0	55	31	28	11					11	27
S12 -	16	18	2	20	88	13	12	0	0	7	93	52	97	33	75	22	19	63	9	33	48	100	27	50
S13 -	0	0	0	0	2	0	0	0	0	0	0	79	75	26	60	0							0.3	27

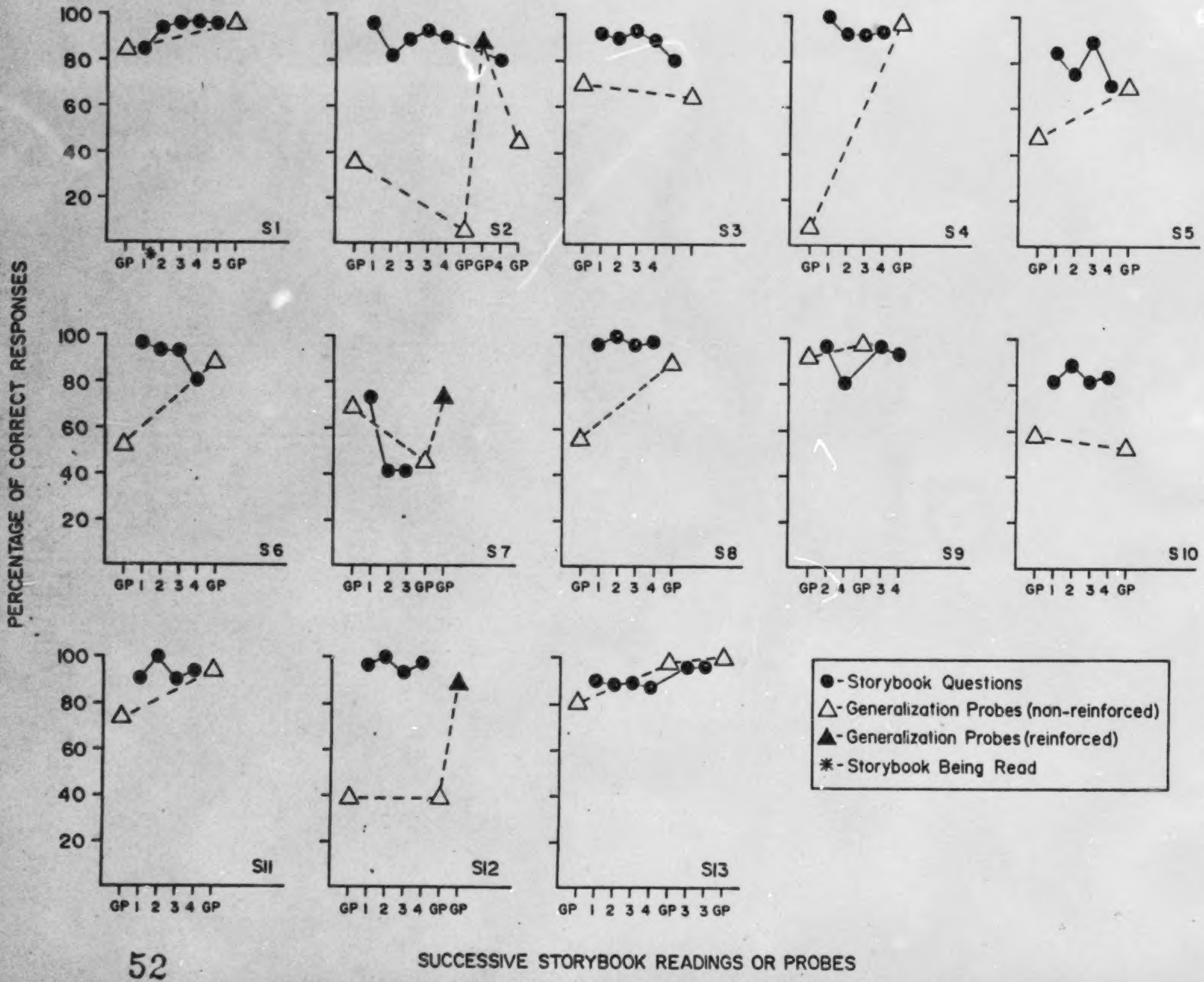


Figure 5

Observed Children's Responses to Concept Probes and Storybooks

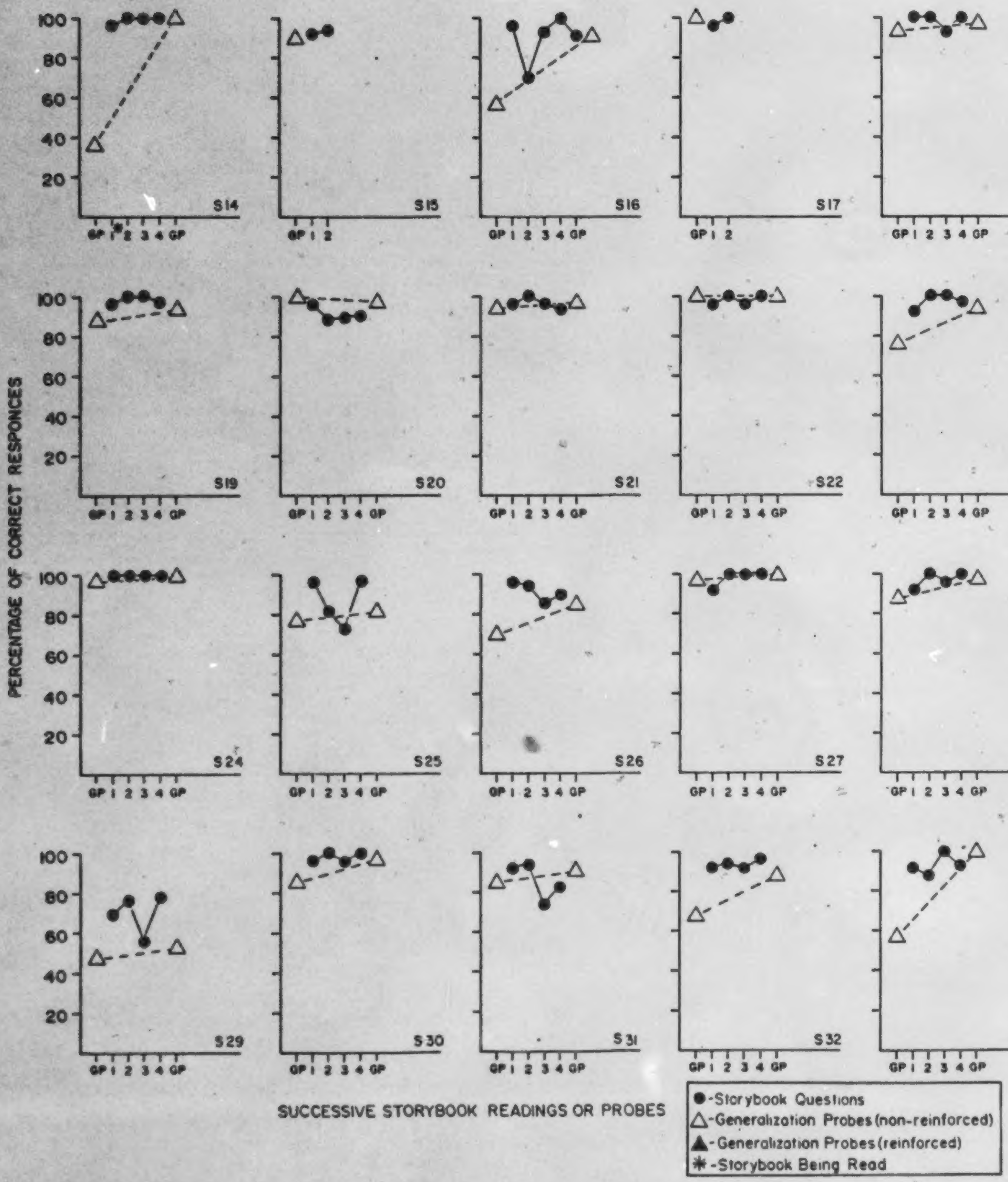
Figure 6 presents storybook and generalization probe data on unobserved children. This group of children averaged 94% correct responses to imbedded storybook questions. They averaged 80% correct responses to baseline generalization probes and 91% correct on post intervention probes. Sixteen children improved their performance on the probes after the intervention, one stayed the same, and one declined in performance.

A coefficient of correlation was calculated between mean baseline rates of entries into the street and performance on the generalization (safety concept) probe. A similar correlation was computed for the intervention phase. The correlation was +.13 for baseline and +.26 for intervention, neither of which was statistically or materially significant. Thus, in the case of the observed children, behavior and safety concept were not related.

Figure 7 shows the probability of observed children receiving a reprimand from parents 6 intervals preceding or following an entry into the street. The figure offers data of theoretical interest: If a stimulus is discriminative (that is, elicits behavior), that stimulus should most probably occur before the occurrence of a response; if a stimulus is a reinforcer (that is, strengthens the probability of future behavior), the stimulus should follow immediately the occurrence of a response. During baseline, the lowest probability (0.02 reprimands per observation) occurred 4 to 3 intervals before a child's entry into the street, and the highest probability (0.147 reprimands per observation) occurred 1 interval after an entry. A spiked distribution

Figure 6

Non-Observed Children's Responses to Concept Probes and Storybooks



centering around the entry interval, characterized the baseline probability. During intervention, the lowest probability (0.007) occurred 5 to 4 intervals before entry, the highest (0.038), during the interval of the entry. A nearly flat distribution characterized probabilities during intervention. Thus, reprimands met the criterion for a reinforcer during baseline but not during intervention.

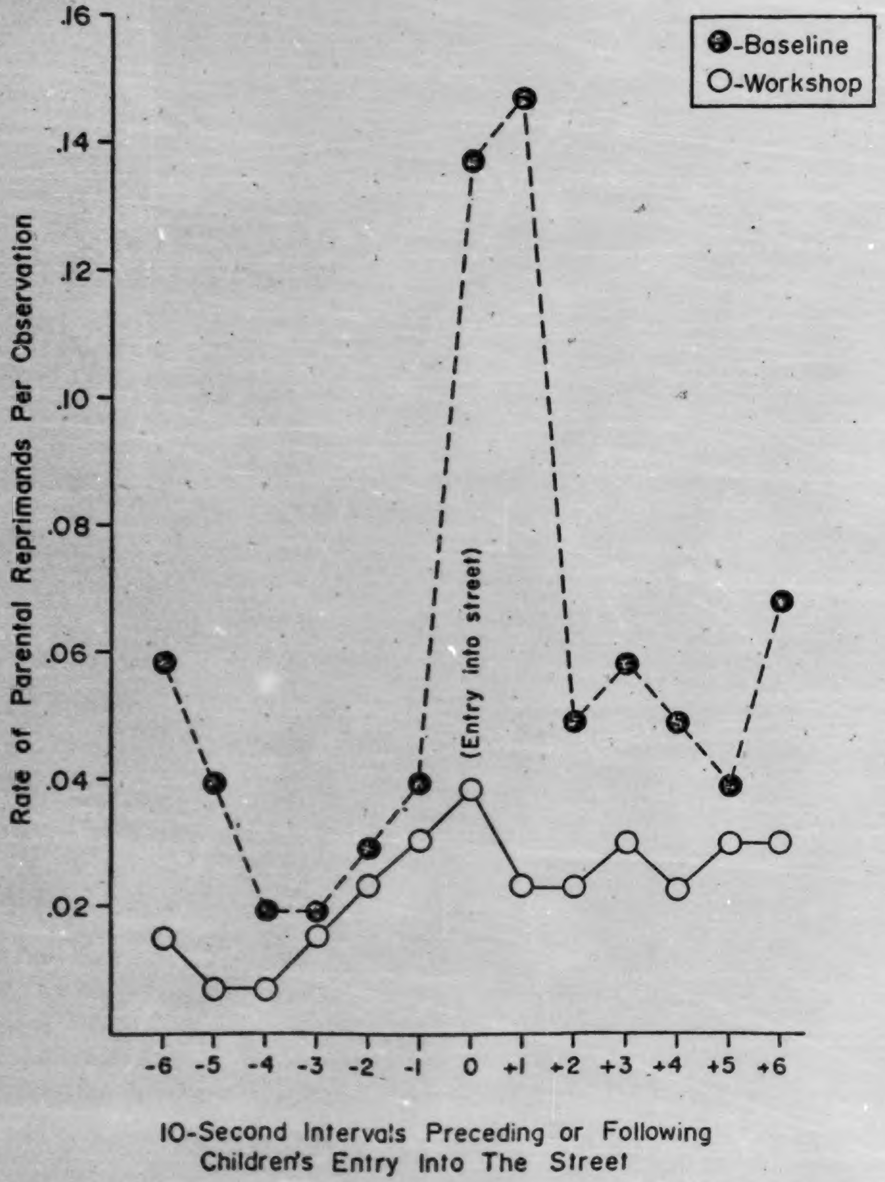
Follow-up home observations were scheduled with observed families about 6 months after the start of the study; these follow-up observations occurred about 100 days (mean) after each family's last regular observation. All but S8, S9, and S13 were observed: S8 was not observed because of family illnesses, events, and travel plans; S9 and S13 had moved to a different city and state, respectfully. Of the remaining families, only one child entered the street during the follow-up observation, S12 (2.0 entries per hour). Thus, combining regular observations with follow-up ones, the effects of the intervention were maintained for 5 to 6 months, depending on the time families attended the workshop.

Parents seemed well satisfied with the effects of the program, based on responses to a close-ended and open-ended evaluation mailed about a month after the last workshop. Seventy percent of the participating parents returned their evaluations. On a 5-point Likert scale (1 = very relevant, 5 = not relevant), parents rated the program as relevant: 2.2 (mean), 1.0 (mode). Responding to a similar question about recommending the program (1 = highly recommend, 5 = not recommend), parents indicated a willingness to recommend it: 1.3 (mean); 1.0

(mode). Only three parents indicated that they did not use the sticker chart (a xeroxed paper with places to affix five stickers), although comments indicate that two of those used the stickers without the chart. Parents who had children in the study over 5 years of age or about to enter kindergarten felt that the workshop should have focused on how to teach street-crossing skills, because such children were either allowed (or would be allowed) to cross the street going to school or, occasionally, near home. Most parents indicated some specific things they liked about the program (e.g., the storybooks, the group experience or process, and the "informativeness" of the workshops). Only one parent suggested changes in the program, which was to cut down the workshop time; all other parents made either no response to the question or wrote, "nothing."

Figure 7

The Probability of Parental Reprimands
Occurring Before, During, or After
Children's Entry into the Street



DISCUSSION

A parent workshop and special storybooks for their children were effective in reducing children's entries into the street to a rate approximately 10% of that observed during baseline. The package also increased parents' use of praise and reward for safe play and children's correct identification of photographs depicting safe play. The program reduced the rate at which parents reprimanded their children for unsafe play. No relationship was uncovered between the children's baseline concepts of safe play and their rates of entry into the street for baseline or intervention. In summary, the package succeeded in altering all the various target behaviors of participating children and their parents.

The present study reveals the possibility of making durable, positive changes in children's pedestrian-accident related behavior near their home--better effects than obtained previously in a modeling-only condition (Embry & Malfetti, 1980). The study adds further support to the literature on the effectiveness of parent training (e.g., Clark et al., 1977; Patterson, Ray, & Cobb, 1973) and behaviorally based safety education (viz., Yeaton & Bailey, 1978; Page, Iwata, & Neef, 1976; Jackson, Mayville, & Cowart, 1972).[6] Behavioral data and the parents' evaluations indicate the viability of the boundary hypothesis as a possible approach for improving the pedestrian safety of preschool-aged children.

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[6] Reading (1973) uses data and findings from Jackson, Mayville, & Cowart (1972) without citing the original researchers.

Topics of scientific and applied interest emerged from this experiemnt. A discussion of them follows.

The fact that most pedestrian-vehicle accidents involving preschoolers occur near children's homes mandates home-based observation of any intervention program, yet such observations introduce the possibility that both parents and children might react to the presence of an observer, thereby threatening the validity of any findings. The threat of such reactivity deserves attention.

American ethos condemns parents who allow their children to play in the street, and observers probably embody that ethos in the eye of parents. Consequently, the presence of the observer ought to induce paernts to keep their children out of the street. If so induced, parents were not too successful during baseline: Children continued to go into the street. This apparent lack of reactivity during baseline is supported by other research: Johnson and Bolstad (1975) as well as Johnson and Lobitz (1976) have shown that neither obtrusive observations nor explicit instruction to "solve the problem" seriously affect the behavior of naive parents in controlling their children. Given that observers evaded giving feedback to parents, did not train the children, and did not tell the parents about the specifics of the code, reactivity during baseline was probably minimal.

After the workshop, parents were no longer naive: They knew how and why to keep their children out of the street and that observers would be coming subsequently to their homes. That parents and children should react to the instruction they received is desirable; that they should react to the observer is not. In what way did the parents and children react: To the intervention? Or, to the observers? Or, to both?

These questions can be definitively answered only in a study employing unobtrusive observation, which can now be justified by the positive outcome of the present study. Unobtrusive observations would not have been justified at the onset of the current study, considering the expense of such observations and the uncertainty of outcome. If the parents and child could not demonstrate behavior change in the presence of an observer, one would hardly expect them to do so in the absence of one. Until the completion of an unobtrusive study, one may only speculate about the influence of an observer on parent-child behavior change.

The evidence suggests that the parents and children reacted to their instruction. (a) Parents used the program (sticker chart, etc.) intermittently or less and less after attending the workshop, whereas more consistent use might have been predicted if parents were responding to social pressure. (b) Parents apparently used the stickers and charts at times other than those observed, judging by the number of stickers and charts they reported using compared to their observed use. (c) None of the observers gave any feedback to the parents about their behavior, and such feedback exerts a powerful effect on parents (L. Embry et al., 1978). (d) None of the observers was involved in the training of the children, so it is unlikely that the presence of the observers cued children's behavior. In short, some reactivity may have occurred during intervention, though such reactivity probably cannot account for the magnitude of effect obtained by the intervention.

Did the program increase children's safety by decreasing their entries into the street? A multiple-baseline study across large communities or states would be required to show a reduction in accidents, but the current study can provide an estimate of reduced exposure to risk--being in the street at the same time as a car.

The average density of vehicle traffic at the observed homes was 41.8 vehicles per hour (Table 3), and the speed limit in all but one case was 30 mph (although most cars seemed to travel faster). At 30 mph (or 44 ft/sec), vehicles can easily traverse the "accident window"[7] in front of the child's home within 10 seconds, or one interval, of observation. Thus, an average of 41.8 of such windows occurred at the homes of the children observed in this study. The probability of observed children and vehicles being in that window at the same time may be computed thus:

$$\frac{\text{Mean Vehicles Per Hour}}{\text{Number of 10-Second Intervals in an Hour}} \times \frac{\text{Mean Entries into the Street Per Hour}}{\text{Number of 10-Second Intervals in an Hour}}$$

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[7] Grayson (1975) reports that most accidents occur within 100 yards of the child's home, which might be thought of as the "accident window."

Using this formula, the probability estimate for observed children (S1-S12) entering the street at the same time a vehicle passed was: 0.001637 during baseline, and 0.0001277 after the intervention. Thus, for these children, their risk exposure was reduced by a factor of 12.6. In everyday terms, for about every 24 hours of accumulated outdoor play, a conjunction of cars and children in the street occurred 16 times during baseline, and one time after the workshop and storybooks.

How will teaching children to avoid the street affect their subsequent learning to cross the street? At some point, probably at the time of entering kindergarten or first grade, children are taught to cross the street. Conceivably, the present program might be so effective that children would be too inhibited to learn the skills required to cross the street, thereby reducing risk at one age only to increase it at another. Prudence leads the authors to recommend study of this potential hazard, although the probability of the hazard seems small.

Between the ages of 5 and 7, children's cognitive development accelerates; then they certainly can master parental limitations of "cross the street only to and from school." Furthermore, parents can resort to a fading strategy (viz., "Never play in the street"; versus the earlier "Never put your feet in the street without a big person holding your hand"), which is one of the best teaching strategies (e.g., Corey & Shamow, 1972; Fowler, Rowbury, Nordyke, & Baer, 1976). Both the cognitive development of the child and sound teaching strategies mitigate against some untoward effect caused by teaching children to observe boundaries.

The opposite hypothesis can be entertained: Having learned to observe safe boundaries, children could then learn to cross the street with greater safely. Before the safe-playing program, parent-child interactions concerning pedestrian safety were negative, and such negative interactions increase a child's overall level of noncompliance to parental instructions in general (L. Embry et al., 1978) and pedestrian safety specifically (Rothengatter, Note 4). After the program, parent-child interactions were positive, which increases the probability of general compliance to parental instructions. Accordingly, children going through the safe-walking program would be far more likely to comply with later parental instructions about traffic safety (possibly a life-saving development, since 25% of the fatalities occur while the child is within 6 feet of the adult and apparently "escapes the control"--Grayson, 1975). The inhibition developed about entering the street may generalize to pausing or stopping at the curb, again a development of some importance, because not stopping at the curb is one of the child-related behaviors that seems to be important in street-crossing accidents (Grayson, 1975). Thus, a good case can be made for the safe-playing program aiding the learning of street-crossing skills.

Why was there a differential rate of correct responses to generalization probes among observed and nonobserved children, favoring nonobserved children? The likely answer lies in the children's ages. Nonobserved children averaged nine months older than observed children, and maturation can dramatically affect preschoolers' performance on concept tasks.

Why was there no correlation between rates of safe play and safe-play concept? Several answers are possible. (a) Young children lack the cognitive skills to link the abstraction to the concrete circumstances of their own lives (e.g., Brainerd, 1978). (b) The present experiment measured the wrong concept; some other safety concept might be linked to the behavior. (c) The contingencies of reinforcement that mediate concept acquisition and safe behavior are, in fact, different. (d) The finding of a significant correlation during intervention was improbable because of restricted intersubject variability and ceiling effects. Future research might clarify the answer, although researchers and educators are cautioned not to assume that safety concept and behavior are always related in young children.

Data from two subjects raise some narrower questions. Why did S12 go into the street more, immediately after intervention? And, what can be done to induce implementation of the program among families like S13's?

Consider the first question. The workshop taught parents to use a correspondence-training procedure (e.g., Rogers-Warren & Baer, 1976). Specifically, parents were instructed to ask their children before going outside if they were "going to play safely," to praise their children for a yes answer, and to reinforce actual safe play. Such a chain rewards promise-keeping (called SAY-DO in the correspondence training literature) and can be quite powerful (Israel & O'Leary, 1973; Paniagua, Stella, Holt, Baer, & Etzel, Note 9).

Unfortunately, the mother of S12 changed the procedure to a DO-SAY paradigm; that is, she asked her child if he had been playing safely and praised/rewarded him for his answer, which was usually a false yes. Typically, the mother had not seen his transgressions (viz., a part of a wheel sliding into the street); thus she was reinforcing him for telling a lie and going into the street. His entries into the street fortunately declined after a few sessions, probably because Time Outs (Sit and Watch) were given for those infractions of the rule that the parent saw. (She reported using the procedure, although the behavioral data show no recorded instances during the observation times). Additionally, most of the child's entries occurred while riding a bigwheel on the driveway, and the parent later decided to tell the child not to ride past a certain crack in the driveway (which was about 5 feet from the street) rather than up to the gutter. The Time Outs and boundary change apparently corrected the backfire caused by the incorrect correspondence-training procedure.

The parents of S13 failed to implement the parent program, and their child thus failed to show any sustained improvement (although there may have been some short-term effect caused by the storybooks (viz., Embry & Malfetti, 1980), but it is difficult to tell because the investigators were unable to schedule any observations until 10 days after S13 was initially exposed to the books). The family was experiencing considerable difficulty at the time: marital problems, chronic illness of the mother, and family difficulties involving the possibility of assuming the care of a niece and nephew. Since the family profile resembled that of children who had been involved in accidents (Backett & Johnston, 1959), lack of success with the family is a matter of some concern.

In the context of this experiment, feedback from the first author (who was also an observer) probably would have caused the parents to implement the program (L. Embry et al., 1978). Such an intervention would have compromised the validity of this study, but such a strategy might be adopted in a future study or by teachers in actual practice.[8]

Other tactics might be tested to improve the percentage of parents implementing the program. On a particular day, teachers might schedule a special "show-and-tell," during which children would be expected to bring one of their completed sticker charts so that they could tell how they earned stickers, a reward for safe play, etc. The charts could then be posted on the bulletin board, with teacher-typed summaries of the child's account of his/her success. Such a "curriculum program" could induce parental compliance (L. Embry, Note 10). The workshop handouts on the sticker chart and timeout (sit and watch) might be adapted to a "make and take" storybook for parents to read to their children, and the children could make covers for their own storybooks. Again, this procedure might increase parental complaince (Issacs, L. Embry, & Baer, Note 11; Kelley et al., 1979).

The present study offers analytical evidence (Figure 7) that reprimands reinforce (reward) unsafe play, an argument made previously by the authors (Embry & Malfetti, 1980). While some may find it strange that reprimands might increase the chances of a child going into the street, the literature is replete with examples of how "Attention to inappropriate behavior" increases the chances of more inappropriate behavior (e.g., Pinkston, Reese, LeBlanc, & Baer, 1973). Thus, suggestions to parents that they talk to or reason with their children about dashing into the street will likely have the opposite impact. Reprimands do not punish unsafe behavior; they reward it.

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[8] At this writing, the Detroit Public Schools Head Start is planning to have teachers make home visits regarding this program, when it is implemented there.

The success of the parent workshop and storybooks in this study betokens a package disseminated to preschools and daycare centers. Such a possibility raises two questions: What is the projected, potential ratio of such a distribution? And, what needs to be done to insure effective widespread implementation of a program?

The saving of children from death or injury requires little ethical justification, but a society must evaluate how best to spend its resources to save children: A million dollars could be spent to save the life of one child or the lives of 100. When resources are limited, any potential life-saving intervention merits an analysis of its potential effectiveness.

The following estimate of cost-benefit ratio begins with the assumption that the program would be distributed to all organized day-care centers and preschools in the U.S., which affects about 25% of all preschool-aged children (Current Population Reports, 1979). Suppose further that the children enrolled in such programs account for 25% of pedestrian casualties (144 deaths, 2,600 injuries for ages 2-4), although some demographic analyses indicate that these children account for more than 25% of these casualties: Black, lower-income, urban children are disproportionately involved in pedestrian-vehicle accidents, and children with these characteristics are disproportinately enrolled in day-care centers or preschools by virtue of federal funding. The results of the present study indicate that 90% of the participants will be affected by the intervention --2,744 potential casualties, and post-check data reveal that the program confers reduced risk to participants for an entire accident season, which is May through September for preschoolers (Bulhman et al., 1979). If the risk exposure data emerging from this study are representative and translate into lives saved and injuries foregone, these 2,744 potential casualties would be reduced to 10% of that figure, or 14 deaths and 260 injuries. Hence, using this algorithm, one might expect to save annually 130 young children from death and 2,340 from injury as a result of the widespread distribution of the safe-playing program.

Each accident involving a child creates not only personal and familial tragedy, but also economic loss. Probably the best available estimate for the economic loss incurred by such accidents comes from Cross' (1978) work on bicycle accidents. (The authors have been unable to locate similar work on pedestrian accidents). Cross (p. 20) estimates that each fatality costs approximately $231,000 and each injurious accident costs $1,100. Consequently, the estimated economic benefit from saving 130 children from death and 2,340 from injury each year is $32.6 million!

Costs of a widely distributed program are estimated as follows:

Fixed Costs

$ 50,000	-Research and development
$2,000,000	-Production costs for 40,000 centers and preschools, based on 100 children per center, at $50 per kit)
$ 250,000	-Distribution costs (handling & mailing)
$3,000,000	-Inservice training for an estimated 200,000 preschool teachers and aides
$5,300,000	-TOTAL ONE-TIME COSTS

Annual Costs

$ 800,000	-Disposable materials $0.50 per child, 1.6 million children
$5,000,000	-Teacher time devoted to implementation. 5 hours per teacher at $5 per hour X 4 --200,000 teachers and aides (this represents hours foregone that teachers might have spent on something else)
$1,000,000	-Continuing training costs (after Year 1)
$ 100,000	-Evaluation studies for program refinement
$ 300,000	-Replacement of broken or lost kit parts after Year 1)
$7,200,000	-TOTAL ONGOING ANNUAL COSTS

Over the course of a decade, which is the projected life-span of the package, the estimated distribution and implementation costs should total to $70 million. Over that same period, the total economic gain from saved lives and foregone injuries would equal $326 million. Subtracting costs from benefits, the net gain would be $256 million, which might be greater because of the projected increase in the preschool-aged population and their projected increased enrollment in day care ("Child Care in the 80's--Trends in Consumer Demand," 1979).

Of course, the above cost-benefit analysis is only a gross estimate, designed to elucidate potential savings from widespread adoption of the program. A precise estimate would require months of inquiry and analysis. One would wish to develop fatality and injury costs based on child-pedestrian accidents, insert the effects of inflation into the equation (viz, hospital costs have risen at a far higher rate than the general rate of inflation), examine staff ratios for preschools, the mental health costs associated with the treatment of drivers of vehicles striking children and with parents of children so struck, etc. One might wish to conduct a field study of the natural rates of entry into the street across types of communities and residences so that risk exposure and reduction thereof caused by the program might be better estimated. Such an inquiry and analysis probably would change the actual numbers but not the balance of the equation: The present study indicates that the safe-playing program ought to save children and money.

Some may object to assigning value to lives lost and to injuries--either based on ethical principle or based on discomfort with the methods used to estimate the monetary effects. An alternative exists: cost-effectiveness analysis (Thompson & Fortress, 1980). Such analysis involves the following formula:

$$C/E = \frac{\text{Net monetary effects}}{\text{Net monetary effects}}$$

Using data from the previous paragraphs, the cost-effectiveness ratio for averted casualties (both deaths and injuries) for a decade would be:

$$C/E = \frac{\text{\$70 million}}{\text{2470 casualties averted}} = \text{\$28,806 per casualty averted}$$

How does the cost-effectiveness ratio of the safe-playing program compare to other health interventions that affect children? As of January 30, 1976, the Social Security Administration was spending $18,058 for the initial year's treatment of one new case of end-stage kidney disease (Dodge, 1977), which annually kills about 120 children under the age of 5. In the cases of child abuse or neglect, involving permanent foster care, states spent $20,000-$35,000 per child in 1976, depending on the cost factors included (Emlen, Lahti, Downs, McKay, & Downs, 1978). Thus, the projected cost-effectiveness ratio of the safe-playing program falls within the range of current child-health interventions.

The breadth of impact of the program could be improved if it were applied to settings other than preschools and day-care centers, because the economies of scale become more pronounced as distribution widens. (Enrollments in preschools and day-care centers, however, are projected to increase by between 25-100%--"Child Care in the 80's- Trends in Consumer Demand," 1979). Parent workshops could be conducted by church groups, which are a frequent focus of family interactions; workshops could also be conducted by civic service clubs, which abound with volunteers for good works. Although some slight changes might be required in the program (viz., the instruction manual) to adapt to other settings, a majority of the nation's preschoolers might be affected by the safe-playing program if it were distributed to preschools, day-care centers, and alternative settings.

Diffusion and adoption of proven educational or health-prevention techniques happen slowly and with difficulty (Human Interaction Research Institute, 1976), and any attempt to distribute the safe-playing program must confront that fact. The production and distribution of safe-playing curriculum kits will not necessarily result in widespread adoption of the program; adoption itself must be nurtured. A good formula for nurturing the infant safe-playing program can be created from the literature on the adoption of innovation:

1. Preschool and day-care personnel across the country should be sent a brief survey, ostensibly to uncover perceptions of and experiences with safety education. The process of conducting the survey increases acceptance and adoption of the promoted program (viz., Mann, 1971; Miles, Hornstein, Calder, Callahan, & Schiavo, 1971). The information gained from the survey can be used to promote the program (product) better (viz., Coe & Bernhill, 1967; Costello & Zelkind, 1963; Havelock, 1973; Niehoff, 1966; Zander, 1962). A mailing list for such a nationwide survey can be constructed from subscriptions to professionally-related journals, conference attendance lists, and State Departments of Education lists of preschools and day-care centers. The brief survey should be mailed to as many early childhood educators as possible.
2. A number of articles should be published in the popular and professional literature about the program and related activities, which should facilitate adoption (Dahling, 1962; Halpert, 1966; Department of Health, Education, and Welfare, Note 12; Garvey & Griffith, 1972).
3. Workshops and seminars at the city (if quite large), regional, or state level should be conducted on the program, since face-to-face group encounters are singularly potent diffusion tools (e.g., Clark, 1962; Crane, 1970; Garvey & Griffith, 1971; Glaser, Coffey, Marks & Sarason, 1967; Glaser, 1973; Glaser & Wrenn, 1966; Havelock & Mann, 1968; Roberts & Larsen, 1971). Special workshops and seminars should be planned for ad-

ministrators since the support of top leaders is crucial for the adoption of an innovation (e.g., Flanagan, 1961; Gloch, 1961; Likert & Lippitt, 1963; Sieber, 1968). (The brief survey should be used to help identify opinion leaders to be invited to some of the workshops and seminars).

The combination of these techniques should facilitate widespread adoption of the safe-playing program.

A program can be widely distributed but used poorly or improperly, which was the experience of some of the Follow-Through Programs. Care must be taken to insure the best use of the intended program, and the Direct Instruction Method (Bereiter & Engelmann, 1966; Becker, 1977) offers some valuable insights on how to achieve optimum use. (a) Materials should be designed so that they elicit best teacher behavior. (b) Teachers should be given a chance to rehearse novel behaviors and given feedback for correct actions. (c) Group training and promotion techniques should be used, since they tend to promote compliance with specified procedures. Discussions with teachers and administrators during the development of the safe-playing program also brought to light the need for some kind of "consulting service" on implementation problems once teachers and administrators actually began using the program; a "hotline" was a commonly expressed desire.

Some methodological points of the present study merit discussion. The points might limit the generality of the present study or indicate betterments for replication purposes.

White-collar parents predominated in the current investigation, which was representative of the community in which the study took place; communities with many blue-color or unemployed parents might necessitate changes in some of the procedures (Blechman, Budd, Christophersen, Szykula, Wahler, L. Embry, Kogan, O'Leary, & Riner, Note 13). For example, illiterate parents cannot read a "make and take" storybook to their children so that a teacher might have to make a cassette tape for the parent to use with the book at home.

Estimates of interobserver agreement on parental reprimands and praise bordered on the line of acceptability, but the present data-collection system was quite demanding. Given the demands of a 10-second interval code, 75% interobserver agreement is remarkable, considering the difficulties encountered with a simpler code (Embry & Malfetti, 1980). Unlike the previous study, observers underwent considerable training before conducting actual observations. Future reliability on these behaviors might be further enhanced if weekly calibration sessions were held in which all observers viewed a new videotape, featuring all of the observed behaviors. Such calibration sessions should serve to keep low-rate behaviors in the minds of the observers and to accustom them to behavioral permutations. The value of calibration sessions became obvious in the current study when one of the observers reported that "a parent was giving out some funny stickers with Sesame Street characters on them"; that observer wasn't sure how to score such an event, becasue he had never seen such a thing during baseline or in the training videotapes--eventhough, the code discussed such an event.

In an earlier study (Embry & Malfetti, 1980), the authors coded the kind of wheeled toy the child used entering the street. This code was used to calculate probabilities of a particular toy being used unsafely. The present study only noted with what kinds of wheeled toys a child played, because the authors were concerned about the demands of the 10-second interval code (which proved manageable). Future studies might reintroduce the earlier convention, because such information would provide valuable consumer-product safety data.

Until a program is developed to train workshop leaders, direct or systematic replications might fail because of a leader's lack of experience with direct parent training. Research in progress (Issacs & L. Embry, Note 14) and a rich folklore among parent trainers indicates that experienced parent trainers display unique therapeutic and instructional skills in communicating with parents that may account for positive outcomes--above and beyond the potency of behavioral procedures per se. Thus, the authors hope that an in-service training program can be developed to teach some of the appropriate skills to potential implementers of a widely distributed curriculum package. Indeed, the development of such an in-service program might offer an opportunity for important future work, because many scientifically developed curriculum programs for children have suffered once distributed to on-line personnel.

Pedestrian accidents kill and maim thousands of preschool-aged children. Teaching independent street-crossing skills to young children will likely increase the risk of such accidents, considering what is known about accident profiles, the pedestrian task, and children's cognitive development. Teaching young children to observe safe boundaries by avoiding the street, however, should increase their safety.

The combination of parents' workshops and children's storybooks was effective in teaching children to observe safe boundaries, resulting in more than a magnitude reduction of exposure to accident risk. A participating parent dramatically summarized the impact of the present study: "The Safe-Playing Program has been a great relief to me; I no longer race to the window every time I hear tires squeal."

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Appendix A

Sample Letter to Parents

April 3, 1980

Dear________________________,

Would you help save children from a tragic problem? I'm developing a program to teach preschoolers about traffic safety, and I need your help.

You probably worry about your child playing near or in the street, since you are the parent of a preschooler. So, I don't have to go on and on about doing something about the second-leading cause of children's death. You already know how serious this problem is.

The American Automobile Association (AAA) Foundation asked me to develop a program to teach preschoolers about traffic safety, and I am also working with Sesame Street on this project. You, as a parent of a preschooler, can help in the development of the program.

My coworkers and I want to test some materials that we've developed for schools and the home. We'd like to try those materials with your child at school and then have you try the parent package at home.

Here's what should happen during the course of the study.

(1) After you return the attached consent form, we'll make arrangements with you to watch your child playing outdoors at home for 30 minutes during the afternoon, after your child is home from school and usually plays outdoors. The time will be scheduled at your convenience. We will watch your child a number of times before we start training.

(2) Later, we'll ask you to come to a special workshop just for parents. The workshop will last about 45-60 minutes, and we will provide child care (at the meeting), refreshments, and transportation (if needed). At the workshop, you'll learn what and how to teach your child about traffic safety. The things taught in the workshop should ease your worry when your child is playing near the street.

(3) Just after the parents' workshop, we'll teach your child about some of the important concepts about traffic safety. These concepts will be taught to your child at school, using specially created storybooks starring your child (whose name is used) and Sesame Street characters. By teaching your child these concepts, your efforts at training your child at home will be made much easier. (We've already tested these special

storybooks and have found them effective in teaching young children). After your child has heard the storybooks at school, we'll send a note home with your child so that you can start training at home.

(4) We plan to continue observing your child playing outdoors at home for a while after training. These observations will help us determine how useful the total package is. These observations will be at your convenience, too.

A note of reassurance. I've instructed the people who will be working on the project that they should do something to help your child if they see your child in great danger, and no one else can help.

We have a limited number of openings for this valuable program, so be sure to return your form as soon as possible.

When this study is completed, I'll be happy to share the results with you. If this study and some others are successful, we will be preparing a program to be distributed (at little or no cost) across the United States, which should help reduce the number of children struck by cars while playing near their homes. Will you and your child help solve this tragedy by participating in this research?

Any questions you have, I'll be happy to answer.

Sincerely,

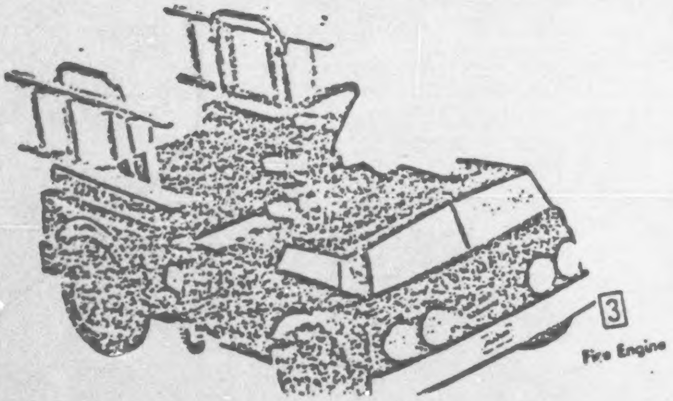
dennis d. embry

Dennis D. Embry, M.A.
Coordinator,
Safe-Walking Project

864-3413 or 841-1840

P. S. Please return the attached consent form in the enclosed, stamped envelope, telling me whether you wish to participate.

P. P. S. If you want to know more about the project, you can read about it in the Journal World, September 16, 1979. Copies are available from me or the public library.



As a special thanks for your involvement, this pedal-powered fire engine will be given away as a "door prize" to one of the families participating in the research. Every family will receive a LIMITED EDITION ROAD ATLAS from the AAA.

early childhood institute

April 3, 1980

Dear ______________________________,

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My coworkers and I want to test some materials that we've developed for schools and the home. We'd like to try those materials with your child at school and then have you try the parent package at home.

Here's what should happen during the course of the study.

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(3) After completing the program, we'll ask you some questions about your satisfaction with it.

We have a limited number of openings for this valuable workshop, so return your form as soon as possible to reserve a place.

When this study is finished, I'll be happy to share the results with you. If this study and others (measuring the changes in children's behavior) are successful, we will be preparing a program to be distributed (at little or no cost) across the United States, which should help reduce the number of children struck by cars while playing near their homes. Will you and your child help solve this tragedy by participating in this research?

Any questions you have, I'll be happy to answer.

Sincerely,

Dennis D. Embrey

Dennis D. Embry, M.A.
Coordinator, Safe Walking Project

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DDE/hs

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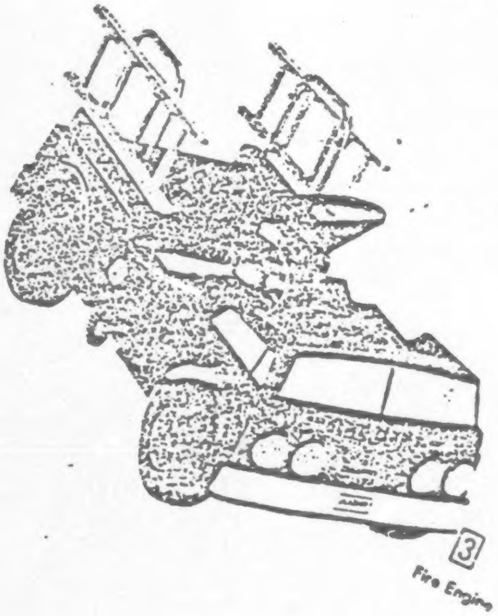

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PARTICIPATION AND CONSENT FORM

YES, I do wish to participate in the Safe-Playing Program.

NO, I do not wish to participate in the Safe-Playing Program.

Parent or Guardian's signature: ____________________

Child's Name: ____________________

School & Classroom ____________________

If you have consented to participate, please note that you may choose to withdraw from the project at any time for any reason. This program has been reviewed and approved by the University of Kansas' Committee on Human Experimentation.

If you are choosing to participate, please indicate a phone number at which you can be reached and the best time to phone you.

Phone: ____________________

Time: ____________________

____

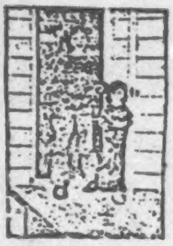
PLEASE RETURN THIS FORM IN THE PREADDRESSED, PRESTAMPED ENVELOPE TO:

Dennis Embry, M.A.
Coordinator,
Safe-Walking Project
130 Haworth Hall
Early Childhood Institute
The University of Kansas
Lawrence, KS 66045

SAFE-PLAYING PROGRAM

Appendix B

Parent Poster



ASK

ASK IF YOUR CHILD IS GOING TO PLAY SAFELY.

ASK WHAT PLAYING SAFELY MEANS.

DEFINE AREAS OF SAFE PLAY AS NEEDED.

TIMER

SET A TIMER TO HELP YOU BE CONSISTENT.

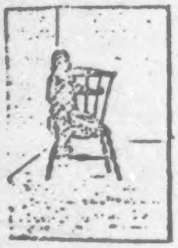
A TIMER HELPS YOU REMEMBER AND LETS YOUR CHILD KNOW THAT YOU ARE SERIOUS.

PRAISE

PRAISE YOUR CHILD FOR PLAYING SAFELY. YOUR CHILD VALUES YOUR ATTENTION.

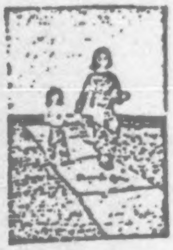
REWARD

REWARD YOUR CHILD'S SAFE PLAY. PLAYING SAFELY IS HARD WORK FOR YOUR CHILD. CHOOSE SOMETHING YOUR CHILD LIKES TO EARN.



SIT & WATCH

GOING INTO THE STREET IS DANGEROUS. IF YOUR CHILD GOES INTO THE STREET WITHOUT YOU, MAKE YOUR CHILD SIT AND WATCH FOR 3-5 MINUTES.



TEACH

TEACH YOUR CHILD ABOUT SAFE CROSSING. HOLD THE CHILD'S HAN AND ASK "WHEN IT'S SAFE TO CROSS." GIVE FEEDBACK.

Script of video tape presentation

Transcript of Video Tape

Used in Parent Workshop

[Scene inside house by front door]

Mom: Hi, I'm Nancy Ness, and today I'm going to tell you about some of the techniques that I've used to train Ryan to stay out of the street and to play safely on the sidewalk and in the yard.

Mom: Are you going to play safely today, sweetheart?

Child: Yes.

Mom: All right! Do you remember what playing safely means? It means that I want you to stay up on the sidewalk, and in the grass, and up on the driveway and Not to go in the street. If you remember to stay up on the sidewalk, in the grass, and in the driveway, I'm going to set the timer for a certain amount of time and when that timer goes off you get a sticker to put on your chart, if you do it. Now, if you do get it, and if you get it full, you'll get something special. Like a piggyback ride. How does that sound? Do you like that? What else do you think would be special?

Child: [Shrugs, sign of indifference]

Mom: How about if we play a short game of baseball with you?

Child: Did you bring the ball and bat?

Mom: Yes, I did. O.K, you can go outside. I'll come outside with you and put this sticker and the chart outside with you.

[Fade from indoors to outside by front porch]

Mom: Ryan, I'm going to set the timer for 5 minutes.

[STOP tape to make oral comments]

Mom: You can go out and play in the yard or on the sidewalk, or on the driveway, but not in the street. If you play safely for 5 minutes then I'll give you a sticker to put on your chart. How does that sound? O. K. You can go ahead and play now. I'll set the timer.

Child: Mom, I won't go into the street...

[STOP tape to make oral comments]

[TIMER RINGS]

Mom: You played safely for 5 minutes. Ryan, you've been playing so well! I'm so proud of you. You haven't gone into the street. Here's a sticker! Here we go! You can put it right up here in the first slot on the chart! Good for you, Ryan. Now, I'll set the timer again and we'll see if you can go for another 5 minutes.

[STOP TAPE, Dennis asks the group to write down praise words for own child]

Mom: Where do you play safely? Can you tell me?

Child: Playing safely...not in the street.

Mom: Right; where are you supposed to play?

Child: On the sidewalk.

Mom: All right, I'll set the timer now.

[Fade out, fade in, timer rings]

Mom: I'm proud of you, Ryan. You made it for another 5 minutes.

[STOP TAPE, Dennis comments on letting Ryan put on his own sticker]

Mom: See if you can earn your third sticker.

[Fade in, fade out, timer rings]

Mom: A third sticker, Ryan. You'll this chart in no time at all! Good for you. All right. You put on the sticker. Put it in the third slot. Ryan, I'm going to go inside. There are some things I have to do. I'm going to set this timer for another 5 minutes. I want you to play safely. Where are you going to play?

Child: Right here on the sidewalk.

Mom: Good for you! O.K. 5 minutes.

[Fade out, fade in, Timer rings]

Mom: Ryan, you are just being terrific today. You get a fourth sticker to put on your chart! Playing safely...staying up on the yard for me. All right. One more sticker and you've got it made. I'll set the timer to ring in 5 minutes. Do you think you can play safely for 5 more minutes?

Child: Yes.

[Fade out, fade in, timer rings]

Mom: A fifth sticker! Great! You filled up the chart! Good for you, kiddo! You stayed in the yard, you stayed on the sidewalk, you filled up your chart!

Child: [shakes head, yes]

Mom: Good for you, kiddo! I'm going to go get Daddy and you can play with the baseball. Remember this is what you earned. Remember I said that you could have something special after you earned enough stickers to fill up your chart. You guys are going to play baseball with Ryan. Good for you, Ryan!

[Dennis comments on how she knew he was playing safely. Group time for writing down privileges. Discussion of those privileges.]

Mom: Later, in the afternoon I asked Ryan to play safely outside in the yard. He said that he would. But before the timer went off, he went out of the yard, down the driveway, and out into the street.

[Cut to outside]

Mom: Ryan, what's this? That's not a safe way to play.

[Walks toward porch]

Mom: Sit right there on this step. That's what happens when you don't play safely.

Child: Mom...

Mom: I'm going to set this timer.

[Timer rings]

Mom: All right, Ryan, you can just come off the steps now. You don't have to just sit on the steps anymore. Are you going to play safely this time? I want to make sure that you don't go in the street. What else should you do? Where are you going to be playing?

Child: The sidewalk

Mom: That's right. Up here on the sidewalk. Good boy. O.K. You can go play now, sweetie.

[STOP TAPE, Dennis talks]

[Mom sitting on porch swing]

Mom: You are probably wondering whether or not these things are going to work on your child. They will. All you have to do is to be very, very patient and diligent and consistent. Make sure that you use the stickers, use praise. That's very important. They light up with it. Kids love it. Make sure that if they do go in the street that you are not pleased with it. Don't come down hard; just sit them down on the step and make them watch. That's enough of a punishment; they understand that it's a dangerous place to go. Run through some rehearsals with your child. These things work with my children. I have used them for a number of years.

Mom: There's one more thing you might want to try with them....

[Outside]

Mom: Ryan, would you like to cross the street and play with Jay and Melissa now?

Child: Yes.

Mom: O.K. Let's go. I want you to look and tell me when it is safe to cross the street. Look the other way, too, Ryan.

Child: Yes.

Mom: Good for you; you did a good job of crossing. You're right, it is safe.

[CUT TO FRONT PORCH, DIFFERENT CHILD AND MOM]

Mom: O.K., Ben, we are going to learn about doing something different today. A new rule. You know how I get real mad when you go out in the street on your bigwheel and how I scream, and sometimes I even come out and spank you. We're going to do something different now. A new rule. I'm going to show you how it works.

[Point to Mom's arm]

Child: What's that?

Mom: Well, its a little owie. I bet it will get better real soon, won't it? A kiss, oh, thank you, that will help it a lot.

Are you ready to hear about the new rule? If you go out into the street, I'm going to say: "Ben, it's time to come up here and sit on the steps because you went out into the street." I'm going to show you how to do sit and watch. All right?

You're all set. First thing. During Sit and Watch, I have to set the timer. I'm just going to set the timer for 1 minute, now because this is just a pretent practice, O.K.?

You're sitting there real well. Boy, you know how to do Sit and Watch. You can watch the timer, but usually the timer will be up here when you are in Sit and Watch. Because when you go out in the street, you're not supposed to be there so you have to be sitting up here. You're sitting here nicely. You know just how to sit quietly. When the bell rings, if you are quiet, you can get up.

[TIMER RINGS]

Mom: You were quiet, so you can get up now.

Thank you. Good. You did a real good job. Now, why are you going to have to come up here for Sit and Watch?

Child: If I go out into the street.

Mom: If you go out into the street. That's right. O.K. You can go play now.

Appendix D

Handouts on using Sticker Charts and Sit and Watch

USING THE SAFETY CHART[1]

Your child values your attention, and a simple sticker chart improves the power of your attention.

What is a sticker chart? It is a paper on which stickers, stars, happy faces, etc. are put each time the child does something that you want to continue or occur more frequently. Charts can be use for almost anything a child does, but you're trying to increase the amount of time that your child plays safely by playing on the grass, the sidewalk, the driveway, etc.

How does a sticker chart work? In the case of playing safely, parents set a timer for short intervals (initially five (5) minutes and working up to 30 minutes). At the end of the interval, the parent praises the child and awards a sticker for safe play. At the end of five intervals (stickers awarded), the child may exchange the five stickers for some privilege (for example: TV time, having a friend come to play, or listening to a record) or for some treat (for example: having hot dogs for lunch, a piggy-back ride, or trip to the fire station).

Why does a sticker chart work? It works because it helps the parent be consistent and more positive. Also, children like working for stickers, and the exchange of the stickers for something teaches the children responsibility for their own actions.

Before Starting

1. Explain to your child where you want the child to play. Show the child those boundaries.
2. Show the child the stickers and explain that they can be earned by playing safely (within your boundaries).
3. Show the child the chart and explain that if s/he earns five stickers that s/he can exchange the chart for something special.
4. Make a list of special things for your child to earn. List both privileges and things. Your list should include both easily obtainable items and others that require more work to earn. Keep this list current and flexible.

Using the Charts

1. Initially, put up the charts outside where the child usually plays.
2. Keep both the sticker sheet and the timer handy but out of the child's reach.

---

[1] Adapted from the Practical Parenting Course, Lynne H. Embry and Carolyn Martin, Copyright 1979. Adapted by permission of the authors.

3. Initially, stay outside. Set the timer for a short time period (5 minutes) for the first two times.so that the child gets the hang of the system. Praise safe play during those first intervals.

4. If the child is successful, move up to 10 minutes for each interval.. On the second and third day, always start with a short first interval.

5. If after three days, 10 minutes of safe play occurs regularly.. Move the time up to 15-20 minutes. After a week, it may be possible to move to 30 minutes of play. (Don't go beyond 30 minutes; young children should be checked at least every 30 minutes to make sure that something hasn't happened).

6. Stay in or outside or both as is your custom, but make sure that you can watch the child for the whole interval so that you can see if the child was indeed safe for the whole time.

7. Praise your child everytime the timer goes off and on other occasions during the intervals.

8. Vary the treat or privilege that the child can work for.

Solving Problems

What if the child goes in the street during an interval?

First, put the child in Sit and Watch. Reset the timer after the Sit and Watch and tell the child that he or she has another chance to earn a sticker.

What if the child denys any interest in the stickers after a Sit and Watch?

Tell the child that he or she has to be safe anyway. Then, ignore any other comments on the subject and give out the stickers and praise for safe play.

What if the child doesn't want the privilege or treat after earning the five stickers?

Praise the safe play. Tell the child that he or she might like the item next time better. Tell the child that the item was earned, offer it, and ignore other comments about the item.

When can the chart be stopped?

After two or three weeks, if the child's play is consistently safe. Keep up the praise-- perhaps even a little more praise after you first get rid of the stickers.

What if the child suddenly gets worse?

If you are still using the chart, drop back to shorter time intervals required for safe play. If you stopped using the chart, you may need to use it again.

What if the supply of stickers is exhausted?

Draw in smile faces. Use stars. Use the stickers from from mail promotions for magazines. Rubber stamps work well, too.

What if my child likes to play at a playground and the chart is too awkward?

Put the stickers on the child's clothing or toys.

GUIDELINES FOR USING SIT AND WATCH[1]

Before Starting

1. Buy or borrow a portable, long-ring timer that you can take throughout the house. The timer on the stove will work if you can't get the portable kind.

2. Choose the "Sit and Watch" area(s). Choose a place outside, the front steps for example. Also choose a backup place indoors, the kitchen for example.

3. Rehearse "Sit and Watch" with your child before it happens. This way, you won't feel guilty taking your child to Sit and Watch. Also, your child will be more cooperative, because he or she will know what to do.

   Rehearsing Sit and Watch:

   (a) Explain that going into the street without holding mommy, daddy, or whomever's hand is unsafe. Tell the child that he or she will go to Sit and Watch for going into the street without holding (blank's hand).

   (b) Explain and show how you will quickly take the child (or carry, if necessary) to the Sit and Watch area.

   (c) Have the child sit quietly for a brief period (60 seconds) in the Sit and Watch place. Explain that if the child is quiet when the timer rings, the s/he may get up but that if s/he is screaming, yelling, and so forth, then there will be another Sit and Watch.

   (d) Emphasize that this is just "pretend" or "practice." Thank and praise the child for doing a good job pretending and sitting quietly.

   (e) When the timer rings, allow the child to get up and thank her/ him for "good pretending."

   (f) Do the rehearsal several times before actually using "Sit and Watch."

   (g) Ask your child several times before why he or she would have to Sit and Watch.

---

[1] Adapted from the Practical Parenting Course, Lynne H. Embry and Carolyn Martin, Copyright 1979. Adapted and printed here by permission of the authors.

Using Sit and Watch

1. As soon as the child goes into the street, say firmly but without yelling:

   "You went into the street; that's unsafe. You must go to Sit and Watch."

2. Set the timer and say:

   "If you're quiet when the timer rings, then you may leave Sit and Watch."

   (Set the timer for three (3) minutes for children under 2½ years, five (5) for older children.)

3. Keep the timer with you and move away from your child. Don't talk to your child. (Eventually, you'll be able to go inside.)

4. When the timer rings, thank the child (don't overdo it) for sitting quietly and allow her/ him to get up. However, ask the child if s/he is going to play safely now.

Solving Problems

What to Do If Your Child Fights You When Going to Sit and Watch?

1. After the Sit and Watch is over and everyone is calm, explain kicking, screaming, and so forth will cause the child to have two (2) Sit and Watches. That is, the timer will have to ring twice.

2. The next time your child goes to Sit and Watch, give a reminder: "You have to go to Sit and Watch; if you go nicely, you'll only go once. If you get mad and fight, you'll have two (2) Sit and Watches.

3. If the child is cooperative, thank him or her.

4. If the child is uncooperative, say:

   "You weren't cooperative; you may not get up until the timer rings twice."

5. Set the timer once. When it rings, reset the timer and say to the child:

   "This is your second Sit and Watch for being uncooperative. When it rings again, you may get up."

   Do not say anything more!

How to Convince the Child that Sit and Watch Outdoors Is Better than Sit and Watch Indoors?

(1) Use the regular procedures.

(2) Explain that if s/he gets up before the timer rings, then Sit and Watch will have to be indoors.

(3) Take the child to the indoors place as soon as s/he gets up. Stay close enough to your child to do this quickly, especially if your child likes to play games by "running away."

(4) If the child makes a mess inside during Sit and Watch, say:

"You'll have to have more Sit and Watch until the room is cleaned up." (If the child has torn up more than he or she can clean up, you may have to help--a little.)

WARNING: Keep Sit and Watches short (2½ to 5 minutes). Longer ones make things worse not better.

Appendix E

Parent Packet:

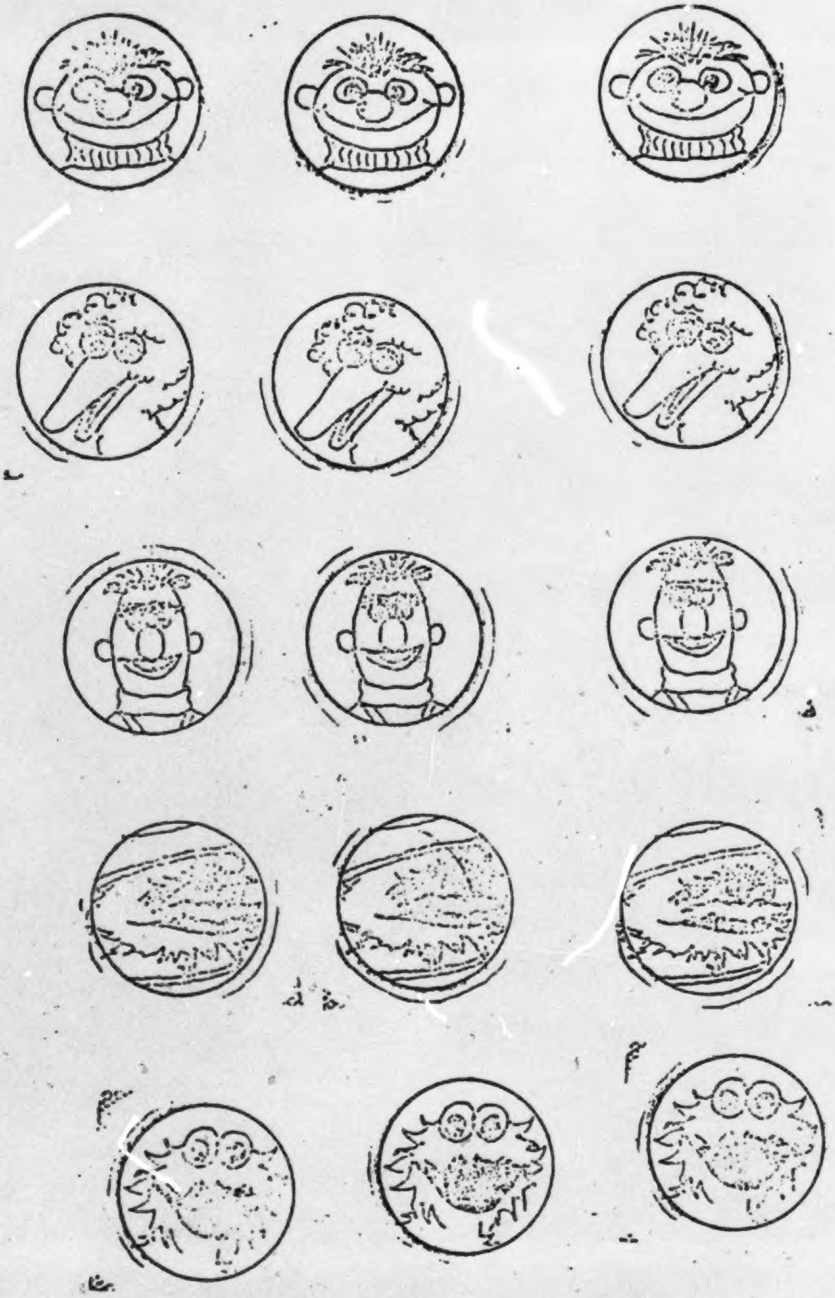
- -Sticker chart
- -Stickers
- -Question mark label
- -Form for recording possible rewards
- -"Good words for good kids"

(CHILD'S NAME)

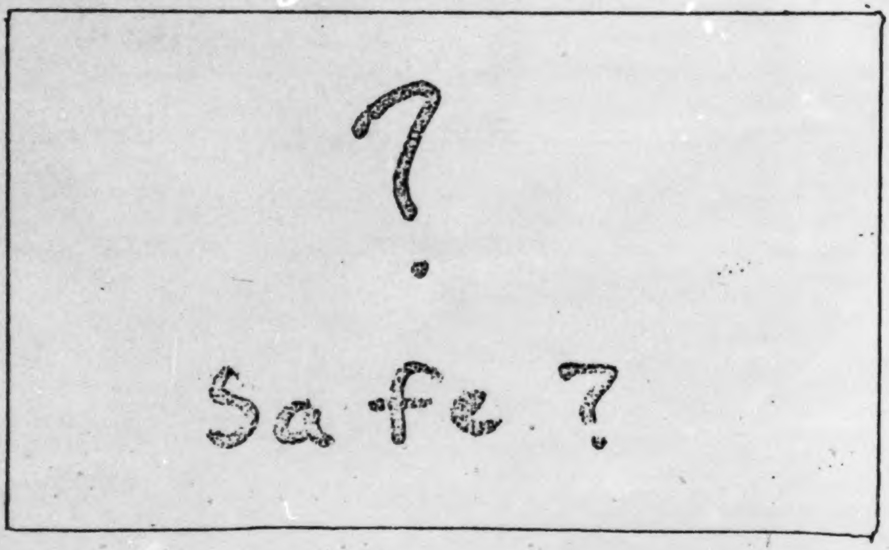
SAFETY CHART

TIME FRAME/ DATE(S) ____________________ TREAT ____________________

Sample of Stickers Given to Children



Sample of
Question Mark
Memo
for parents



ACTIVITIES

Immediate:

1. *Example: piggy-back ride*
2. ______________________
3. ______________________
4. ______________________

Delayed:

1. *Example: Go to the zoo or park*
2. ______________________
3. ______________________
4. ______________________

THINGS

Immediate:

1. *Example: a stick of sugarless gum*
2. ______________________
3. ______________________
4. ______________________

Delayed:

1. *Example: picking out a small toy car at K-Mart*
2. ______________________
3. ______________________
4. ______________________

GOOD WORDS for GOOD KIDS

great
Good
Neat
YEAH!
Wow
sWELL
terriffic
Right On
Super
PerfECt
Correct

WHEN YOUR CHILD IS SAFE, LET HIM OR HER KNOW. TELL YOUR CHILD HOW MUCH YOU APPRECIATE SAFE PLAY. PRAISE YOUR CHILD OFTEN FOR SAFE PLAY -- AT LEAST ONCE EVERY 15-30 OF OUTDOOR PLAY. PRAISE MORE OFTEN AT FIRST.

BE SPECIFIC. "FANTASTIC! PAT, YOU STAYED ON THE SIDEWALK WHILE YOU WERE RIDING YOUR BIGWHEEL."

PRAISE IMMEDIATELY. TELL YOUR CHILD HOW HAPPY YOU ARE WHILE YOUR CHILD IS PLAYING SAFELY--NOT AN HOUR LATER.

VARY YOUR PRAISE. USE DIFFERENT WORDS.

Beautiful
Wonderful
FANtAstic
Fabulous
Outstanding
Nifty
Splendid
KEENO
All Right
Bravo
Neato
Excellent

Appendix F

Observation Protocol

and

Sample Data Sheet

OBSERVATION CODE FOR SAFE-PLAYING STUDY

EXPERIMENT 2

The first study in this project revealed some defficiencies in the original code, which recorded both frequency and duration of children's play in the street. The present code scores both child and parent behavior on a 10-second interval basis, and it involves modified definitions from both the first safe-playing study and the Practical Parenting Code (L. Embry, Note 1). The revised code will yield data on frequency and duration as well as measures of parental efforts to influence their children's play behavior.

Settings

The observations will take place outside the homes of families with young children, typically near streets. Since this study is examining how frequently children enter the street, it is important that parents prompt the children to play in areas in which the child has the opportunity to enter the street. Thus, for example, a parent should prompt the child to play in the front yard rather than the fenced-in back yard, which eliminates the opportunity to stray into the street.

The parent can prompt play in the target areas by putting out favorite toys (e.g., bigwheels) for the child to play with. Neither the parent nor the observer(s), however, should attempt to prohibit the child from choosing to play in areas away from traffic (e.g., the fenced back yard).

Equipment

Each observer shall have a clipboard, pencil, 10-second coding sheets with parallel tracks (one for the child and another for the parent), and a 10-second beeper (mini-cassette recorder or FM radio tuned to receive a special broadcast from a mini-cassette machine).

Data sheets have places to enter the child's name, the date, the observer, condition (done in the office), number of children outdoors playing, and a check for primary or reliability observer. All these items must be filled out before commencing observations. Certain data must be entered on each page, because multiple pages are required for this observational scheme.

Each recorder is equiped with a log to note the number of observations that it is used. After eight observations, turn on the recorder and let the batteries go down completely. Then, plug in the recharger overnight. Every clipboard is equiped with an emergency batteries, in case batteries unexpectedly go bad. These spares should always be replaced in their holder after recharging the original ones.

The batteries used in the recorders are the same as the ones used in the FM radios, which are used by reliability observers. The FM transmitters use 9 volt batteries and should function throughout the study without replacement. If it should go bad during an observation, however, simply move closer to the primary observer's recorder (which should be turned up louder).

Behaviors

Two classes of behavior will be recored: child and parent. The subsequent paragraphs define each, noting appropriate symbols to be used on the data sheets.

CHILDREN'S BEHAVIOR

Children's behavior will be coded in several ways, which are described below.

(A) TOUCHING WHEELED TOYS. Any wheeled toy (bigwheel, tyke bike, bike, wagon, etc.) that children touch during the course of the study must be written down at the bottom of the observation pages. Such a toy need only be noted once; eventhough it is played with more than once during a given session. For example, Jan touches a bigwheel five times during the session; bigwheel need only be written down once. However, Jan also touched a bike, a scooter, a skateboard, and those things must be recorded. The purpose of this notation is to arrive at some estimate of a child's opportunity to play with wheeled toys, which are more likely to be used in the street.

(B) WALKING OR RUNNING INTO THE STREET (Symbol = F). In in the frame of an interval, the child puts one or both feet into the street or the gutter, write down an "F" in that interval. Only one (1) "F" may be recorded per interval. Essentially, this code notes whether the child entered the street with his or her feet. An interval in which an "F" were recorded might look like this:

(child line)	F
(parent line)	

Notations: ____

____

(C) RIDING WHEELED TOY INTO THE STREET (Symbol = W). If in the frame of an interval, the child is playing with some wheeled toy (e.g., bigwheel, trike, bike) that has one or more of its contiguous parts touching the street (the front wheel in the street, for example), write down a "W" in that interval. Only one (1) "W" may be recored per interval. However, one (1) "F" and "W" may be recorded within a given interval. Coding of a child who entered the street in a string of intervals with a wheeled toy might look like the following:

(child)	W	F	WF	W

(parent)				

Notations:

(D) PLAYING OUTDOORS BUT NOT IN THE STREET (Symbol = 0). If the child is playing outdoors and does not enter the street (as defined above) within a given interval, code a "0" in the interval. Thus, a string of intervals in which a child played outdoors, entering the street once, would appear as follows:

(child)	W	0	0	0

(parent)				

Notations:

(E) GOING INDOORS, NOT AVAILABLE FOR OBSERVATION (Symbol = /). If the child goes indoors (both feet must be inside), then code a slash thru the interval to indicate that the child is not available for observation. (It is possible for a child to have gone into the street and not be available in the same interval, though such an event is most unlikely). Coding of "going indoors", playing safely, and entering the street might look like this:

(child)	/	/	0	0	F
(parent)					

Notations: ____

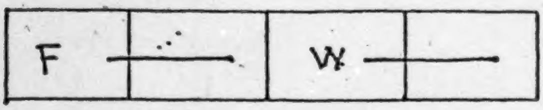
____

____

CONVENTIONS AND EXCLUSIONS

(1) If a child continues to play in the street after entering the street, then draw a continuous line through the vertical lines dividing the intervals:

(child)



(2) If the child changes from a wheeled toy to running or vice-versa while playing in the street, no changes in coding should be made.

(3) If the observation starts while the child is already in the street, record an "F" in the first interval if the child is on his/ her feet or a "W" if the child is playing with a wheeled toy. Follow standard conventions thereafter.

(4) If a child walks or runs into the street while carrying a wheeled toy, that entrance into the street should be coded as a "W."

PARENTAL BEHAVIOR

Parental behavior will be recorded in a number of ways, which are described below. Coding of parental behavior should be made on the second line, just below the child line using the same 10-second interval tone.

(A) PARENT OUTDOORS (Symbol = P). If the parent has both feet outside, the observer should score a "P" in the interval of the parent line. Only one (1) "P" may be recorded per interval. A sample interval in which the parent was outdoors would look like this:

(child)	0
(parent)	P

Notations: ____

____

____

(B) PARENT INDOORS (Symbol = /). If the parent is indoors, draw a slash (/) through each interval in which the parent is indoors. A parent is coded as indoors if standing at the door, inside the window yelling, etc. Coding the parent indoors might look like this:

(child)	0	0	0	0	0
(Parent)	/	/	/	P	P

CONVENTION NOTE: A parent might be outdoors and indoors in the same interval. If both occur, only the outdoor behavior need be recorded.

(C) PARENTAL VERBAL NEGATIVES (Symbol = -, a minus sign). If a parent reprimands the child (e.g., "Get out of the street") or instructs the child (e.g., "Don't go in the street) about playing in the street, the score a minus (-) in that interval. Do not record minuses for non-traffic related verbalizations (e.g., nagging about hitting, lack of sharing, not coming in for dinner). Only one minus (-) may be recored per interval. If a parent is giving a verbal negative during a beeper tone, a minus (-) should be scored in both intervals. An observation chain with parental verbal negatives might look like the following:

(child)	0	W	0	R	R
(parent)	P	P^-	P^-	/	$/^-$

A parent might give a reprimand from indoors, through the door or window.

Notations:

(D) PARENTAL REINFORCEMENT (Symbol = +). If a parent compliments the child for playing on the sidewalk, the grass, driveway (e.g., "Thank you for playing on the grass, you've been playing safely") or gives the child some tangible reward for playing safely (e.g., a toy to play with, a sticker, a special treat), then code a "+" in that interval. Do not record instances of reinforcement for other behaviors (e.g., sharing,

following instructions not related to traffic safety). If a parent is reinforcing a child when the beep occurs, code a "+" in both intervals. Parental reinforcement might look like this on a data sheet:

(child)	ϕ	ϕ	ϕ	ϕ	ϕ
(parent)	/	/	P	P^{+}	P

Notations:

(E) PHYSICAL PUNISHMENT (Symbol =Δ). If the parent uses force (pulling, pushing, squeezing, hitting) as a consequence for the child's playing in the street, score punishment (Δ) in that interval. If a parent is punishing a child when the beep occurs, code a Δ in both intervals. Note this sample observation chain of punishment:

(child)	ϕ	WF	W	W	ϕ
(parent)	/	/	P^{Δ}	P^{Δ}	P

If, however, a parent physically restrains the child from leaving a Time Out, score a TO (explained next).

Notations:

Do not record instances of physical punishment for other behaviors (e.g., hitting, fighting).

(F) TIME OUT (Symbol = TO). If the child is taken or placed on the steps, a chair, or ordered inside for a period of time for going in the street and the parent does not direct attention to the child during that time, then a Time Out (TO) should be scored for each interval in which it occurs. Time Out should not be confused with simply sending the child to another area to play. Time Out follows a child's inappropriate behavior, and the parent purposefully withholds any attention. An observation with a Time Out (TO) might look like the following:

(child)	Φ	W	W	Φ	Φ
(parent)	P	P^{-}	P^{TO}	P^{TO}	P^{TO}

Time Outs for other behaviors not traffic related will not be recorded.

Notations:

PROCEDURES FOR OBSERVATION

Scheduling. Initially, the times for the observations will have been arranged. During the course of the study, parents may alter those schedules. We observe at their convenience, not ours. If the parent changes the time so that you may be late for a date, you will be late for your date. If the parent changes the time for an observation, call Dennis or Harriet about that change that evening or the next day before the observation. Scheduling changes need to be noted for reliability checks and scheduling of the reliability observer.

Try to be at the observation site 5-10 minutes before starting time, which will allow you to check your equipment, ready your data sheets, etc. If for some reason you are going to be late (e.g., car problem), call the parent to tell them so. If you cannot reach the parent, call Dennis or Harriet so that they can keep calling the parent. After you get to the house, be sure to check with the parent to see if the observation is still O.K. NEVER SKIP AN OBSERVATION JUST BECAUSE YOU ARE GOING TO BE LATE. Missing or skipping observations may cost you your job and at least a pound of flesh. If a problem arises, be sure to call Dennis or Harriet so that other arrangements can be made; otherwise, the entire study may be ruined.

If you arrive and the family is not there, wait at least 15 minutes before leaving. Leave a polite note that you were there, leaving at X time, and that you hope nothing is seriously wrong. Ask if the time of the next appointment is O.K. and leave your phone number.

Setting Up. Write in the child's name, the date, your name (indicating primary or reliability observer status), and page number on each page of the data protocol.

Check beeper tone equipment. (1) Batteries should be O.K. (2) Rewind tape to the start. (3) If reliability check is scheduled, make sure the FM transmitter and receiver are working.

Make sure two (2) pencils are quickly available, since one may break.

Starting Observation. Assuming all is ready, you may start observing: (1) Count the number of children outdoors who are in your view (360 degrees) and write down that number on the first page of the data sheet.

(2) Start recorder. The tape will tell you when to begin the first 10-second interval. A tone will sound every 10 seconds thereafter. A double tone sounds at the conclusion of every minute, which allows you to recover a lost place.

During Observation. Keep the child in your sight at all times (unless, of course, the child goes indoors). You should maintain a distance that allows you to hear any verbal interactions between child and parent, but not so close that you are standing on top of the child and parent. Make sure that your position allows you to see the parent come and go outside.

If, during the observation, a child wants to interact with you, tell him very nicely that you are working now, but will play or talk later. Older children (especially 10-12 year-old ones are very curious, so you may say briefly what you're doing).

Your purpose is to observe the child and parent; you are not present as a trainer or teacher. However, if ever the child should be in extreme danger, take whatever steps necessary to save the child from harm.

End of Session. Count the number of kids playing outdoors again and write that number down on the front page of the data protocol. Tell the parents that you are done and thank them. Rewind tape and shut off equipment.

RETURN COMPLETED DATA SHEETS TO 495 HAWORTH (Parent Program Office) no later than 24 hours later, unless it is a weekend.

KEEP TAPE RECORDER AND DAT SHEETS IN A SECURE PLACE (e.g., locked in your trunk, in a desk drawer). Never leave the recorder out where it might be stolen; they are very expensive and impossible to replace on our budget.

What Ifs? A number of events are likely to occur, and you should be prepared to deal with them.

If the child goes inside, wait until the session is over (the full 30 minutes) before leaving; keep scoring. If the child goes in for dinner and you have less than 10 minutes of data for that day, try to reschedule for after dinner if that is possible.

If it begins to rain, terminate session unless it is just a few drops. What if it is raining before you are supposed to observe and there is no chance of it clearing, call the parent to say that you are cancelling because of the weather. Reschedule as necessary.

If some other adult wants to know what you are doing, explain that it is pedestrian-safety research and that you cannot talk right now because you are collecting data (if that is true at the time). You'll be happy to talk when the observation period is over. Later, you may explain the project: (1) grant from the AAA Foundation, (2) working with preschoolers, their families, and daycare centers, (3) 2nd leading cause of death for young children, and (4) your boss is designing and testing some educational materials for the problem. If the person gives you a hard time, you can always say that they should contact Dennis, since he is the boss and knows all about the project. Give them Dennis' name and phone number if necessary.

QUIZ YOURSELF OVER THIS CODE UNTIL YOU REALLY KNOW IT.

NOTATIONS ON SAFE-PLAYING CODE --- 4/ 17/ 80

1. Parent Presence Outdoors -- If the parent is present during any portion of the interval, a "P" is recorded. A "P" and a"/" may not be recorded in the same interval. A "P" takes precedence over a "/."

2. The beginning of the observation is the offset of a double beep.

3. If the parent raps on the window when the child is in the street, score the rapping as a reprimand.

4. The offset of the beep signals the beginning of a new interval.

TIME OUTS

(A) TOI (Time Out Instruction)- When a parent gives a Time Out instruction (which will typically be verbal--e.g., "You're going to Time Out for five minutes, because you went in the street"; or, "Sit here for three minutes, you went in the street." Use the symbol TOI for such an instruction.

Only one TOI may be scored per Time Out episode, and you should code it in the first interval that the instruction occurs.

Score other parent behaviors after first TOI (e.g., P, P^-, P^+)

(B) TO (Time Out) -- TO is scored in the child's interval in the first full interval in which the child is in the Time Out area proscribed by the parent. For each succeeding interval in which the child is in TO, draw a continuous line thru the interval(s).

For example: TO————————————————

(C) Time Out (TO) for the child ceases when (1) a timer rings signaling the end of the TO or (2) the parent releases the child. If both a timer and verbal release occur, the timer takes precedence.

In the next interval after the release or timer ring, start scoring regular child safe/ unsafe behavior.

(D) If the child leaves TO before the timer ring or parental release, score regular behaviors in the interval after which the child leaves the Time Out area. BE SURE TO NOTE IF THE CHILD LEFT WITHOUT THE RING OR RELEASE on the data sheet!

ADDITIONS TO SAFE-PLAYING CODE -- 4/24/80

1. Start of Observation. The offset of the double beep indicates the beginning of the observation period.

2. When to Record. Write down what happened during the observed interval when the tone beeps. It is a good idea to keep your pencil on the interval in which your observing.

3. The end of an interval is the offset of the beep.

4. Reprimands:

   (a) If a reprimand starts in one interval and finishes in another, record the reprimand in both or the several intervals.

   (b) If the child is in the street or just about to enter the street, and the parent shouts the child's name in a harsh tone that indicates disapproval for going or being in the street, score that as a reprimand. However, make a notation that it was a "name" reprimand by writing the kid's name with an exclamation point below the (-) interval.

   (c) If the parent raps on the windo sharply when the child is in the street, score that too as a reprimand.

5. Walking or Riding into the Street -- EXLUSIONS:

   If the parent and child cross the street together and the parent and child are holding hands all across the street or the parent is holding onto the body or clothing (but not the toy) of the child, score the appropriate intervals as safe.

6. Being Indoors:

   Outdoors takes precedence over being indoors, so score a "P" or "0" or whatever as appropriate.

   If the child goes to a neighbor's house that has an opaque, high fenced backyard and the child is thought to be in that yard, score "/" rather than "0."

7. TIME OUTs:

   (a) TOI (Time-Out Instruction) - When a parent gives a time-out instruction (which will typically be verbal -- e.g., "You're going to Time Out for five minutes, because you went in the street"; or, " Sit here for three minutes, you went in the street." Score a TOI in the parent interval.

   Only one TOI may be scored per Time-Out episode, and you should code it in the first interval that the instruction occurs.

   Other parent behaviors may be scored concurrently or subsequently (i.e., P, P^-, P+)

   (b) TO (Time OUt) - TO is scored in the child's interval in the first full interval in which the child is in the Time Out area proscribed by the parent. For each succeeding interval in which the child is in TO, draw a continuous line thru the interval(s).

   TO———————————————

ADDITIONS CON'T

(C) Time Out (TO) for the child ceases when (1) a timer rings signaling the end of the TO or (2) the parent releases the child. If both a timer and verbal release occur, the time takes precedence.

In the next interval after the release or timer ring, start scoring regular child safe/ unsafe behavior.

(d) If the child leaves TO before the timer ring or parental release, score regular behaviors in the interval after which the child leaves the Time Out area. Be sure to note if the child left without the ring or release on the data sheet!!!

QUIZ OBSERVATION CODE

1. The present code scores both child and parent behavior on a (circle answ
   A. 20-second interval basis
   B. 60-second interval basis
   C. 10-second interval basis

2. The code will yield data on ______________ and ___________________ as well as measures of parental efforts to infleunce their children's play behavior.

3. It is important that parents prompt the children to play in areas in which the child has the ______________________ to enter the street.

4. What are the four necessary pieces of equipment for you as an observer?
   A.
   B.
   C.
   D.

5. After ____ observations, turn on the recorder and let the batteries go down completely.

6. Briefly, state what the symbols below mean for our observation of children's behavior:
   A. "W"____
   B. "F"____
   C. "0"____
   D. "/"____

7. Briefly, what do the following symbols mean in coding parental behavior?
   A. "P"____
   B. "/"____
   C. "-"____
   D. "+"____
   E. "Δ"____
   F. "TO"____

8. What should you do if you know you are going to be unavoidably late for an observation?

9. When you start the recorder the tape will tell you to begin the first 10-second interval. A tone will sound every _____ seconds thereafter. A _______________ __________ will sound at the conclusion of every minute.

10. What should you do if a child wants to talk with you during an observation?

11. To where should you return your completed data sheets?

12. Where should you keep your tape recorder and data sheets?

13. What should you do if a child goes in for dinner and you have less than 10 minutes of data for that day?

14. What should you do if it starts to rain?

15. What should you do if some adult wants to know what you are doing?

16. Code the following situation for a child: The child enters the street once, walking, in the third interval and once in the fifth interval on a bigwheel. Otherwise, the child does not enter the street.

17. Code the following situation for a parent: The parent is indoors for 2 intervals and then comes outdoors during the 3rd interval and then in that interval reprimands the child, "Get out of the street!", and in the next interval the parent spanks the child.

18. Code the following child behavior: The child is riding a bigwheel in the street for 4 straight intervals.

19. If a child walks or runs into the street while carrying a wheeled toy, that entrance into the street should be coded as a ____________________. (use letter symbol).

20. Give a example of parental reinforcement that you would symbolize with a +.

21. Translate the following code of children's behavior:

0	W	—	W	0	0

22. Translate the following code of parents's behavior:

/	/	P^-	P^-	/	/

Safe-Walking Data Sheets

CHILD/PARENT________________________________ DATE____________

OBSERVER________________________ CONDITION____________

PRIMARY OBS.________ RELIABILITY OBS.________

_____STARTING NO. OF CHILD PEERS________________ ENDING NO. OF CHILD PEERS__________

CHILDREN

F = Walking into street
W = Riding wheeled to into street
0 = Playing outdoors, not in str.
/ = Going indoors, not observable

PARENTS

P = outdoors
/ = indoors
+ = Reinforcement
△ = Punishment
TO = Time Out
- = Reprimands

NOTE TOYS:						
2						
3						
4						
5						
6						
7						
8						

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Safe-Walking Data Sheets

CHILD/PARENT ____________________ DATE ________ ____

OBSERVER ____________________ CONDITION ____________________

PRIMARY OBS. __________ RELIABILITY OBS. __________ Page 2

CHILDREN

F = Walking into street
W = Riding wheeled to into street
C = Playing outdoors, not in str.
/ = Going indoors, not observable

PARENTS

P = outdoors
/ = indoors
+ = Reinforcement
△ = Punishment
TO = Time Out
– = Reprimands

NOTE TOYS:

9						
10						
11						
12						
13						
14						
15						
16						

Safe-Walking Data Sheets

CHILD/PARENT ____________________ DATE __________

OBSERVER ____________________ CONDITION __________

PRIMARY OBS. __________ RELIABILITY OBS. __________ Page 3

CHILDREN
F = Walking into street
W = Riding wheeled to into street
C = Playing outdoors, not in str.
/ = Going indoors, not observable

PARENTS
P = outdoors
/ = indoors
+ = Reinforcement
△ = Punishment
TO = Time Out
- = Reprimands

NOTE TOYS:

17						
18						
19						
20						
21						
22						
23						
24						

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Safe-Walking Data Sheets

CHILD/PARENT ______________________________ DATE __________

OBSERVER ______________________ CONDITION __________

PRIMARY OBS. ________ RELIABILITY OBS. ________ Page 4

CHILDREN
F = Walking into street
W = Riding wheeled to into street
0 = Playing outdoors, not in str.
/ = Going indoors, not observable

PARENTS
P = outdoors
/ = indoors
+ = Reinforcement
Δ = Punishment
TO = Time Out
– = Reprimands

NOTE TOYS:

25						
26						
27						
28						
29						
30						

COUNT CHILDREN OUTDOORS,
ENTER ON PAGE 1

Edited Transcript of Workshop Number 1

Introductory Remarks

Dennis: We've all, I think, talked to or at least met one another a little bit; and I don't think, Gail, (a parent who arrived late), that I mentioned Ken is with the AAA. He is here both as visitor and as a guest, and he'll probably report and tell them how lousy...or (I hope) good I'm doing. I asked him if he were a parent and he said, not yet, he is going to be on July 1, so that he would participate as an honorary parent at this point.

I'd like to talk just briefly now and give an overview of what we are going to talk about today so that you can kind of have a head "set."

In your packet there are a variety of materials, and our objectives of the workshop in the current program are basically two: (1) What we want to try to do is to teach children not to go into the street, or the alley, or wherever it is there is a serious problem with traffic in or around your own neighborhood. For some of us that may be a greater or lesser problem. And, then, (2) the other thing I would like to do is to offer some things...on how to help children to learn how to cross safely when the time comes for them to do so alone (for example, maybe when they go to kindergarten, or first grade or something like that).

It is not our objective to teach independent street crossing today. I don't think that 2-4 year old children are competent to do that, at this point, not reliable so they go into the street all the time, as we all know, but whether or not they can do that safely is another matter. O.K.?

In the workshop today, what I would like to do is to talk about children and traffic in general, and then work through how parents can gain some peace of mind or reduce the greatest danger to their children. What I'll do is lecture a little bit...show you some slides, and we'll discuss the handouts; we'll see a videotape, and we'll practice some procedures that you might use with your children out of this. Then what we'll do is to try to go through all of this and see if there are any specific problems and questions that need to be adapted to your particular situation, because every general thing has some adaptation to a particular setting or environment or child.

Children and Traffic

Dennis: In the letter that I sent out to you, I alluded to the fact that the second leading cause of death for children is being struck by a car. It ties essentially, with all forms of cancer...every year. If your child hasn't been born with a birth defect, this is the greatest danger that your child,(anybody's child), will ever have to face in their early years. I think there are things we can do to prevent this. Let's talk a little about the situation.

(Interruption of latecomer)

Dennis: We're just getting started; your're just fine.

(Begins talking while showing slide). In the situations that we are going to talk about with children in traffic, the accidents occur in mid-block and at the home. They almost never occur at intersections. Children are typically engaged in some form of play, and they often fail to resist some form of temptation to go into the street or to cross it. And then in about a third of the cases, the children dashed away from the parent or an adult. Have any questions about those things that I just told you? O.K?

Playing outdoors (and this is maybe a little unbelievable) children go into the street 2 to 25 times per hour in most ordinary residential settings that I have observed. That is far more than we ever anticipated to find or to discover.

Parent: What age group are you speaking of?

Dennis: Two to four year-old children. That does not mean they cross the street 2 to 25 times per hour. They enter the street, and they go a little ways out of their driveway on their bigwheel, they may go down by the mailbox, they may chase a ball out into the street, or whatever, the ice cream truck. They may see a friend across the street, or a dog. Any assorted number of things. They don't play for half a hour solidly on a bigwheel. They get off and on of it, they may be on a bigwheel for a little bit in the street, and they may get off of it--or whatever the case. These numbers vary by the child, by the environment, by -perhaps-even the community.

Children unfortunately have a very poor concept of danger. They don't really understand why accidents occur, how they are prevented, and what role they might or might not play in them. Incidentally, in the accidents that occur with young children, about 54% of them, the driver had no means of avoiding the accident. The child simply appeared in the street.

Let me give you an example of how children don't really understand what's happening. In England, there is a case study of a 5-year old boy who was hit 6 times by a car. They asked him why this happened, and he said, "Well, cars aren't supposed to hit people." "Why did they hit you?", and he said ,"I forgot to cross my fingers."

So what children say and think about traffic and accidents is not too good. They don't localize sounds well; you and I can hear sounds and go this way or that way and so on; they get distracted easily; if you're talking to them, their attention is somewhere else or doing something else. They have difficulty with the multiple operations involved in deciding when it is safe to cross. They have a hard time judging things like velocity, right and left, and they forget; sometimes children are 7, 8, or 9 before they can reliably tell right and left. My mother-in-law and my father-in-law have a hard time with it yet. He always says, "Turn right, turn right", while gesturing left. Children have a hard time with the problems or relative size and distance. For example, with a Honda and a Cadillac coming down the street, they may get confused about which is closer because of the size difference between the two.

Basically, for children, I think, traffic is a problem. They just don't understand it ver well. And the complexities of traffic are best left to older children and adults. (But sometimes, if my behavior as a driver is any indication, maybe adults are not very knowledgable.)

What is to be done? Let's teach our children to avoid the street and play safely. Not all of us have the benefit of such lovely charming things as our German friends have drawn on this slide for us, but we can begin a program to overcome some of the skill deficiences that children have so that they will begin to understand the elements of being a safe pedestrian. I'd like to talk now about how we are going to do that.

(End of slides)

How do we teach safe playing? Let's first ask ourselves, why do kids go into the street? I think there are 3 reasons why they go in the street.

First, it's just devilishly fun. Where else can you ride your bigwheel at 15 miles an hour...maybe even 25 going down a hill and scare the daylights out of everybody in the neighborhood? And, strangely enough, I think kids get a lot of jollies out of playing chicken with cars. There's just a lot of inherently fun things to do associated with the street, for the child anyway.

Second, children imitate other children and adults, especially older children. If you see big brother or big sister out there riding on a bicycle, and little Jane or Johnny wants to go out there on a bigwheel.

Three, and this is a hard one--this one did not occur to me until some experience. For many children, going into the street is a form of a game. It's a game in which the parents are the unwilling partners. It probably begins when our children are just beginning to walk. They've kind of overgeneralized. You know, when a kid is just learning to walk, we do the thing when he backs away a little bit, and we chase after him; we do a chase game. For many children, not all, going in and out of the street is that same game, but not in a very safe environment. And even though we may nag them or spank them occasionally, it still is a game for them.

How do we counteract those three things?

Parent: Do you think that the child knows that they are playing a game?

Dennis: No, they don't understand that. No, I don't think that they really fully understand that theyare playing a game. My only indication of that pretty much is that is is a game is that I've seen children giggle, and laugh, leading the parents on the merriest chase imagineable and, it's a way of getting moms and dads all excited... So, how are we going to stop these three things?

(Pulls out poster)

What I have here is just a little outline, and a help when you are using the program. This can go up on your refrigerator, by the door, wherever you are likely to see it and to remind you to do the things that are listed here. Let's talk a little bit about them.

One of the things you can do to help begin this program is to ask the child, "Will you play safely today?" We are teaching the child (your children) either right now or later what the meaning of safe is. For the child that means not going into the street, without mommy or daddy or some other appropriate big person holding the hand. You can define what that other appropriate big person may be because there are obviously other contexts--maybe grandmothers or grandfathers or teenage brother or sister or something like that or even a ten-year old.

Parent: You feel that the hand should be held?

Dennis: Yes. Definitely.

Parent: Oh, see, I had always done that but then when we started I got the impression that you didn't want me to do that. I had always done that. Then there's not a whole lot of problems.

Dennis: Yeah, well, but it is a good point. And I think you were wise to do it. That was probably my misunderstanding. I thought maybe you were evolving and trying to teach her, you know. It is probably a good idea to hold the child's hand, because lots of times the child sees something, goes away and wants to see it--especially if they are on something like a bigwheel. I've clocked bigwheels, and I'm quite sure that they can go 15 miles an hour and they can probably go faster than that on those little things. You're jumping up from a start, without wearing real track shoes or something, trying to catch those little kids before something happens is hard.

Parent: What about some bigwheel. . . . . . in the street? (unintelligible)

Dennis: Wouldn't permit it.

Parent: Have a child also (unintelligible). . . . . .

Dennis: Well, sometimes we have failures. Even experimenters have failures to communicate. But things like wheeled toys and things shouldn't be in the street because the kids can go so fast on them and then get out in things. But, ask, are you going to play safely today? And you can further probe, what is safe, what does playing safe mean? Playing on the sidewalk, the grass, and praise that. That comes in important a little later, because you are going to make your child own up to the promise to play safely. Eventually "Ask" will be an important variable or way of helping your child remember to play safely.

The timer. One of the things we have that is a problem for all of us is being consistent with something. Something happens... we go to the telephone...or the neighbor drops by...or the washing machine rings its bell and we run down and get whatever it is out of the dryer, etc... All sorts of things happen in our lives--I'm terrible, I always overcook my eggs--because I get distracted by something. When I read the newspaper, for example. Dealing with children is no exception. The timer in this instance is a way to help us as adults structure our consistency so that the child knows what is happening and that we are on top of things.

Praise. That's a way to short circuit the game. To start a new one in a sense. The game is playing safely rather than playing unsafely.

Reward. The reward is basically here to counteract all those desirable elements of going into the street...all those neighborhood children who are out there playing in the street... all of the fun things about riding the bigwheel in the street... how to get around that with something that is powerful. Eventually you won't need to use the reward but early on it will be be necessary, probably, . . .

Sit and watch. At some point throughout any training program or at any time--there's no program that's perfect--a child is going to go into the street. So we have to have a means of dealing with that. The kind of thing that I'm going to show you is probably more effective than spanking or longer forms of punishment...you can go to your room for the day. Little kids seem to respond better to short period of punishment--it's more effective--for whatever reason; we're not entirely sure. The other thing is that this kind of technique is a little easier for us as adults to deal with because sometimes spanking is hard on us. You feel really guilty sometimes about spanking your kid-even a kid who has done something awful and atrocious...like running in front of a screeching car. We have that kind of guilty feelings that makes us sometimes not do it when we should be consistent with it. So the "sit and watch" technique is perhaps a better way of dealing with the problem when they go out in the street.

Teach. The last one, teach, we'll come back to at the end.

Parent: Sit and watch what?

Dennis: When the child goes into the street, sit the child on the step or on a chair for 3-5 minutes watching the other children at play while sitting. And the child remembers about playing safely.

Parent: I'm not certain on this timer; how are you using the timer?

Dennis: To remind us to praise and to reward the child. Let's see that on the video. Let's watch a video tape of a parent doing this--I think it will help everything fall into place a little bit. Also, while you are doing this, you might pull out a little list..."Words to motivate kids".

This had its origin with Harriet...it's kind of a funny story...when we first started using our storybooks with kids Harriet was training them, and she kept saying "good", "good", "good". I said, "Harriet, I can't stand to hear "good" anymore, and I don't think the kids can either so we made a list.

Parent: (unintelligible)

Dennis: Yes, if you brought your child today. It not, we'll come and get them.

Parent: (unintelligible)

Dennis: No, they are the special stories done for the kids. Yes. That's one of them. There are 4. I forgot to explain that. ("That's one of the things to remember the next time around.") The sound if going to come out of here because there is something wrong with this deal.

[VIDEOTAPE START] (See separate script of videotape)
[VIDEOTAPE STOP]

Dennis: I might stop and say just a little bit. That you'll find this videotape a little amusing at times for its lack of professionalism. It wouldn't make the national networks, or even PBS, or even some of those cablevision things. But it was rather fun to do and the kids were good. And in fact, the boy you will see here, Ryan Ness, has had all of this, and we had such difficulty in getting him in the scene in which he goes out into the street to do this. We literally, in the greatest sense of the words, had to bribe him to go in the street. I had to promise to let him play with my stero tape recorder, for ten minutes...in order to get him to do this. And there are some little asides in here. She tries to remind Ryan what to do.

Parent: How old is he?

Dennis: Ryan is 5.

[VIDEOTAPE START]

Dennis: He's kind of warming into this situation.

[VIDEOTAPE STOP]

Dennis: Let me back up a little bit. Did you notice the chart stuck up, and on the door when she was talking, in the inside there was a little question mark, on a card that was written large, and that was to remind her, and you may do the same thing, to ask, "Are you going to play safely?" I forgot to put that little card in your packet.

Parent: Maybe I'm too far ahead but he is......she has never asked him what safe playing means...aren't we supposed to do that before we ask the next question?

Dennis: Allright, she asks him later again about where playing safely means when she does a time out. She should have probably done that--to ask where does that mean. In her case, I think it was hard because Ryan has already been through this...I mean, you kind of collapse things as you go along because your child gets more efficient at it. That is a good point.

[VIDEOTAPE START]

[VIDEOTAPE STOP]

Dennis: O. K. One of the things I'd like for you to do--you each have a little piece of paper. We'll show the sequence of her doing this, and what I'd like for you to do is, I'm going to stop just before she comes down, and I'd like for you to write something you would say as a praise statement for your own child for playing safely. Just to give us a practice thing because one of the things is this is a very hard thing to learn--you feel awkward doing this at first, saying "thank you for playing safely"...you feel sort of like a machine or very abnormal...

Parent: You know, when you came, would I go ahead and do it? (unintelligible).

Dennis: In Jonathan's case, he doesn't go into the street, at least I didn't see him. But he may, on some other occasions. You may want to do all of this as an insurance policy.

Parent: ...unintelligible...starting at this point, but I am thinking more about my other child.

Dennis: Sure, that would be quite acceptable. In the case of your other child, you might simply want to use that as an insurance policy. Put in some of the praise things every now and then; you don't have to put in all of this garbage right now. What you are seeing right is the first thing--how do you kind of pull yourself out of the situation if you have a problem. Then once it's kind of under control, a lot of this can be put away, up on the shelf, and you don't have to mess with it.

Parent: Do you believe in creating certain situations?

Dennis: At first, what we've tried to do with the storybooks is to create a kind of situation for you in which the child is more likely to be good so that this program, when you put it in place, you're going to be dealing with a better behaved child, and you won't have to fight the child as much on this thing. So we are creating an artificial situation, if that's what you mean.

Parent: Like the storybook, one of the things in there was the ball going into the street...if that never has occurred, how do you know if it does occur, how the child is going to respond?

Dennis: In a case like that, I think it might be worthwile to practice, if your child likes to play with the ball, practice what you do. In the case of the ball that's one of the points I might bring out, if the ball goes into the street. Or in Beth's neighborhood, I saw a tricycle roll from the top of a hill down all the way to the bottom of it, and if the police would have been there, they would have stopped the trike and given it a ticket, it was running too fast.

Dennis: In a case like that, what you want to teach your child if something like that happens is to come and get you, or some other suitable person to go fetch it. So you might want to rehearse that. We have not done a study on that yet, so I cannot say with absolute certainty that that is the best thing to do...I think so. My best guess is I think so. As I told you all from the very beginning, one of the problems we have here is that this is the only place this is being done, this is the first time that it's been tried, and we don't know all the answers to everything. We know some of the answers but not everything. But I think that's a good point.

[VIDEOTAPE START]

Dennis: [INTERRUPTING VIDEOTAPE SO THAT PARENTS PRACTICE PRAISING WHAT THE VIDEO MODEL JUST SAID]

Oops, I didn't stop that quite fast enough. But what we might want to do is to write down what you might say. You can vary it from what Nancy says. Sue, do you want to tell us what your idea was?

Sue: I just wrote down I was happy [her]child stayed on the sidewalk.

Dennis: Good, Gail, how about you?

Gail: That's fantastic. I'm proud of the way [her child] played safely.

Dennis: Great. In Suzanne's case, when you get up close to the street, that's where the problem is going back and forth. And in other places, Sue, like in your case, your child sits in the alley. O. K.

[VIDEOTAPE STARTS]

Dennis: Sometimes, you notice, she lets Ryan put it up there or she puts it up. In many cases, putting up the sticker...the child doing it...is a real big deal.

[VIDEOTAPE STOPS]

Dennis: Again, let's try another praise statement, this time fitting it specifically to your situation, if possible, to your own, how you might do it.

Parent: Are you saying that after you've made the first statement, you make the next statement.

Dennis: The next one would be varying it. Thank you for the clarificaiton.

[VIDEOTAPE STARTS AND STOPS + time for writing]

Dennis: It reminds me, when I was doing this myself...it was kind of like taking a vocabulary test that when you do when you take those Graduate Record examinations.

Parent: (unintelligible)...my daughter...a year...

Dennis: Another nice variation of "I'm proud of you," for younger children is to use significant others in the child's life, who might not be present, but who might be proud of him. It can be either TV figures, for example, "Big Bird would be proud of you, because you didn't go in the street today."

Noise...laughter, comments unintelligible.

Parent: The Hulk! [laughter]

Dennis: What did you have down, Alice?

Alice: Jimmy, did you play safely? Did you stay on the sidewalk,... unintelligible.

Dennis: That's a nice blend, because having watched the child you know that they were safe and you are also reinforcing truth-telling, which is a nice thing to do too.*

[VIDEOTAPE STARTS AND STOPS]

Parent: (unintelligible)...then, "Is there a reason why you didn't make a tape to show what he did before?

Dennis: Because we didn't have all of the bits and pieces of this, and it was done some time ago. So that we didn't have everything, not exactly like this, but we tried to create what happened. Trying to do the tape during the real time is hard, because you have to stage all of this and we don't have the editing equipment for the videotape...that's one of our problems. One other thing she did in the first few times, in her case, she stayed inside a lot while her child was playing outdoors

But the first few times she stayed outdoors a lot to make sure that she happened to be close by which guarantees success. That's the first thing you want to do, make sure the child is successful the first few times around and then you can kind of shape up to a little more difficult things. In this case, she is going to go indoors.

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*The authors now view this comment as a serious suggestion because of the experience with S12.

[VIDEOTAPE STARTS]

Dennis: She's congratulating him not only for playing safely, but also for filling up his chart, which I think is important.

[VIDEOTAPE STOPS]

Parent: How did she know if he was playing safely?

Dennis: She would watch through the screen door or the window and that's important, when you are doing it, to make sure when you are doing it to make sure that you have...

Parents: (unintelligible comments)

Dennis: One of the things you will be doing eventually is strengthen your child's skill at this enough that you can do it with eventually being able to trust your child enough to play safely without your being there like a hawk for every second. You can turn your back and be sure that your child won't be in outer space at that point. But, initially you must be sure that you have a good eye on the thing.

Parent: (unintelligible)...how much time to spend, are you going to go into that?

Dennis: Yes, that is partly in your case.

Parent: You don't keep this up all the time...just part of the day...while they are out there...(unintelligible)

Dennis: You wouldn't need to do it, if you didn't want to use the chart the whole time you could either stretch the time out to some extent, or you can do it for a while and then just go on (untelligible as interrupted by someone)

Dennis: These are 5 minutes, but that was shown as a training time earlier. I wouldn't go for maybe more than 30 minutes. I would not go for an interval of longer than 30 minutes, because you should check on the child at least that often. We might pull out the sticker chart and talk just a little bit about those things. What I've tried to do is to give you in the first part of this an outline, a justification for the sticker chart, how it works, why it works, and then some of the things you need to attend to before using it and while using it, and involving certain problems. Early on, you should use a very short interval. Let's say, the first morning you try it, that first interval or two ought to be five minutes long, and then you could probably jump right up to 10 minutes, maybe you might have to do a third interval. If you go indoors for example, you might want to do that first indoor interval of 5 minutes, and then, stretch it out.

Parent: While you do it, if you really try to do it, for half an hour at five-minute intervals, and they've got the chart filled up, and they get this treat, and now the rest of the day, obviously, they're going to be out there for a lot more than a half hour. Now, what are you suggesting for the rest of the day? Just let them go the way you normally do? Just try to keep an eye on them?

Dennis: What you could do is if they are going to be out for a longer period of time you could use the second chart but upping the time requirements for getting each thing. Maybe 20 minutes.

Parent: So you are suggesting that while they are out there during the day that you use some kind of...

Dennis: Initially. You can probably within two or three weeks, you ought to be able to dispense with the charts entirely after two or three weeks, as a means... What you might do is have a morning chart and an afternoon chart early on. Through the first day, I am sure you are going to use one chart maybe in 30 minutes just getting the kid adapted to the thing, that this is a neat deal. And that they would like to work for it.

One of the things we might do right now is each of us write down two things that--one privilege and one treat—that our child might like to work for. Then we'll share those and get some ideas from one another.

Parent: You're talking about immediately afterwards, right?

Dennis: It could be something later.

Parent: Now that's a thought I had before, now that you said that. Later, but if that first half hour they were all right, and then you go and increase it..., how do you explain that they are still getting a treat. Will that cause any confusion?

Dennis: Yeah, early on, it's a very good point, Tony, I think probably in the early part of the program, it takes a privilege of the treat, or whatever it is, right away so that...unintelligible... maybe at the end of the first or second week, it could be something that was a little more delayed. Yes, right. This is such an imbedded habit in a lot of children that you really have to jack it up at first to really counteract the whole thing. You have to really grab their attention. Ken, as a parent-to-be, what did you put down for your treats and privileges?

Ken: Well, I said, if you play safe today, I'll take you fishing tomorrow. (rest unintelligible)

Dennis: Gail, you had some.

Gail: Like a privilege, watering the plants, or spraying the plants. That is something you could do right away. And, for a treat, like go for ice cream. Something I don't generally do, but maybe to get her attention it would be worth it, or a stick of gum.

Dennis: Sugarless gum is a nice compromise.

Parent: (unintelligible)...I don't always have some in the house.

Dennis: Spraying the plants is very inventive. I just thought of that now--how much when the kids have been over to our house and when they see me spray, boy, they want to grab ahold of that and spray everything in the house. How about you, Tony?

Tony: Privilege is going to the park, and outdoor painting. Which is a very rare thing, but the kids like to put tissue paper outside on the lawn area and do some painting, but they don't do that very often... Now a treat, of course this is with my daughter in mind, like something that's got some sugar in it, we don't give them much sugar. That wouldn't be an everyday occurrence.

Dennis: How about you, Beth?

Beth: I said, (unintelligible)...or for a privilege, have us make or sing something.

Dennis: Jeanette, how about you? These are all good, terrific ideas.

Jeanette: A flashlight hike when it gets dark. We walk around the block with a flashlight.

Dennis: Boy, that's wonderful! (unintelligible comments from others)

Parent: (unintelligible)

Parent: We have a Quik Shop nearby and...a dime..these big things (unintelligible)

Parent: The more I thought about it, and it probably isn't the right thing, we live close to the Stadium, which has a large parking lot and, at night, or the evenings, we take the kids up there and they can ride their tricycles, etc., there. But I was just thinking, maybe that isn't such a good idea.

Dennis: No, I don't think so.

Parent: But it's not really the street; it's a big enclosed parking area. We are there but is that kind of (unintelligible)...

Dennis: You can teach them that that's a different place...enclosed... That's a nice way of handling, you know, the bigwheels...and all that sort of stuff the kid likes to do. It's one of the privileges, depending on how often you try to (inintelligible) the alley, you might have to make that one a little later in your program.

I had as a privilege, kids like , and Harriet told me this, that kids like to sit at the head of the table at lunch or dinner. That's a big deal. Another possibility is go to McDonald's. The other one, if you have a microwave oven, is to let them push the buttons. How to kill two birds with one thing... you can hyphe it up, let them cook the hot dogs in the microwave. The most interesting thing you can do is to put a marshmallow in a microwave and turn it on. It blows up like this.

Parent: (unintelligible) ...about hot dogs

Dennis: I made the mistake once of trying to bake an egg, and you're not supposed to. I didn't puncture the yolk, and it was one day after we had the microwave oven; I heard this ka-boom, I went running, and there was egg every where. Literally it exploded.

Those are really terrific ideas, and I sure like going in the dark with a flashlight. That's a wonderful one. I might even do it myself. Maybe if I floss my teeth tonight...I have a hard time...maybe if I put up one of these charts for flossing my teeth, I could go on a flashlight walk.

Let's see, if you can, it's a nice idea to put the chart outdoors initially so that the kid can see it. In some cases, that may not be feasible because of where your child plays or whatever. As an adaptation, you can put the stickers directly on the child, or on the child's toy, the bigwheel. They like having their bigwheels have stickers on them.

Parent: May I make one suggestion ...(unintelligible), and that is, buy a package of these stickers, you know, little bunnies, and all kinds of things...(unintelligible)... Boy, these just love those. There's a whole bunch of different ones, and they can pick out what they want.

Parent: Do you have to put them on these charts, and they use them for something else? Can they use that sticker to put it on a certain book, or something?

Dennis: Sure, there's...whatever turns the child on; It's a gimmick. I saw a bunch at Halloween and then I haven't seen any for a while. I guess they are more available now.

[Discussion from several as to where to buy stickers.]

Dennis: I can give you some more of those stickers incidentally, if you do need some. I do have more. But if you've run out in the meantime, use stars or happy facts, you can just draw them in on the chart if you run out. Just make the faces on the chart. What I do think, Tony, with your special problem of how long the child might be outside playing, and I think we're running into it with the weather getting warmer and Daylight Savings Time, and children spend a lot more time outdoors, so it might be neccesary to stretch out the charts or use several of them the first day or two, in order to make it go.

Parent: Do you definitely recommend doing it for half an hour, even if you are out longer, but every once in a while, you know, praise.

Dennis: Oh, absolutely.

Parent: You mean, that's O. K., too.

Dennis: You can always keep a handful of stickers on you, even if you didn't have a chart and all that. And praise to give out... (unintelligible). You know, you can kind of adjust the contract. There are all sorts of ways and a chart...there is no perfect answer, you have to adjust it to fit your child and your situation and all I can do is to try to give you some guidelines.

One thing that may happen, is, what happens if the child goes into the street? That's when you need to do something like "sit and watch". That's what we going to show you right now.

I want to answer one question though, if the child does go in the street, before the timer rings, while the child is in sit and watch, you reset the timer and start that interval all over again. So the child has lost that sticker, but he doesn't lose the ability to earn after the child gets out of sit and watch.

Parent: (unintelligible)...now he is not going into the street but he is leaving the area where he is supposed to play.

Dennis: Sure, you can define it how you want. Like it says in here, you set the boundaries of what you consider to be a safe place. to play. The minimum boundary is not going in the street, there may be other elements to that situation, staying in the backyard. If you have a driveway, and the child likes to play on the driveway, getting out and painting a yellow line, or one of the families we have worked with has a very clever idea, they park the car down at the end of the driveway so the kid has to turn off. That was an exceedingly clever idea.

[comments from someone...unintelligible]

Dennis: It doesn't guarantee, but it can reduce. The other thing, by painting a line across so that the child knows the boundary. It's hard to tell, you say, a little crack here, that's not a very good cue.

If the child denied any interest in the stickers after "sit and watch" you just say, "You're going to have to still be good" and "I'm going to give the stickers anyway" and ignore the rest of the garbage. You just go along.

The child is mad at you, for making him or her sit there for a little bit. Praise the safe play on the part of the child. Award the thing. Say, tomorrow or the next day you might like it better but let the thing happen. You ought to be able to do this in 2 to 3 weeks, and get it to the point where you don't need to use the charts. Just maintaining your praise and attention for safe play ought to be able to keep it going. Occasionally, if there is a relapse, you might have to use it again.

Parent: (unintelligible)...twice a day?

Dennis: Oh, yeah, yeah, do that...at least early on. You are trying to do it two ways. Pleasurable to be safe; unpleasant to be unsafe.

Parent: Should this be done when you observe?

Dennis: Not necessarily. Whatever is convenient for you.

[VIDEOTAPE STARTS]

Dennis: He's being abnormally compliant about this thing because he's had it before. We'll talk about that.

Unintelligible comments from participants

[VIDEOTAPE STOPS]

Dennis: O.K. After your child has had some experience with this, sometimes, the first few times a child will throw a temper tantrum. I could show you the videotape of a child on a first "sit and watch", and it was one hell of a battle. You would have thought that the child was being taken and ordered off the end of the plank. I don't want to disillusion you that the first time around, that the first time around may be hell, just hell.

Parent: (unintelligible)...using time out, which worked beautifully, will that detract from this?

Dennis: No.

Parent: Will being timed out for anything detract?

Dennis: No, it won't detract at all. It will in fact ease it, because your child is familiar with the procedure.

[two people talking at once.]

Parent: Sitting and watching is the same as time out?

Dennis: Yes, it is the same thing. We have not chosen to use the terminology because it is bound up in kind of a particular way of describing things. For example, it's the way the Parent Program describes it and unless you go, I don't like to go through the whole rigamarole explaining what that means, so "sit and watch" is a very easy way of describing what is happening. The kid has to sit and they have to watch. Nobody can talk to them. It's the hardest part.

Parents: (several unintelligible comments)

Parent: You know, we have been talking about what you say to the child. How do you say it is up to the individual? I mean I would have been a lot firmer than she was...unintelligible.

Dennis: Every parent has a slightly different style. It is important when you are using this procedure to keep from getting worked up as a parent. Try to treat it as matter-of-factly as possible. You can indicate displeasure in your voice. "You are not to do that. This is not, etc." But part of the game element for children may be getting you riled up, so the thing to do is to be calm. What you will find is a very interesting thing will happen if you are real cool about it, the kid will go, "Are you mad at me, Mommy?", and you say, "Yes, what do you think?". But, treating it as cooly as possible. Eventually you don't even have to say the whole rigamarole. You just say, "Sit and watch"; you went into the street". That's all it takes. You don't have to go through a long explanation. The first few times it may be necessary.

Parent: Should I call it time out?

Dennis: Sure, use the time out phrase if that's what you use, if you use "naughty chair" or whatever.

Parent: It's amazing how this works. We just used it this weekend, not because of this, but because at preschool they use it. She's used to this. She's knows it's not a good thing. Otherwise, you would almost expect them to say "I don't care if I have to sit in a chair." To her, it was really a big deal.

Dennis: Part of the way we are trying to help you folks out, too, is that the storybooks show this. So we sensitize the children a little bit to what may happen. They also show getting stickers--a Big Bird button which your children will walk home with today and you may use as a reward. "X" number of stickers you get to wear the Big Bird Button. It's real neat, it's got three different colors, laminated, on a piece of yarn, and all that. We used the same thing to teach kids to sit still for wearing their seat belts. It's kind of a fun little gimmick.

Parent: (unintelligible)...several questions. Having a complete safety program having credibility with the child. You are aware of the problems with corners and parking lots.

Dennis: Thank you very much. Ken visitor from funding organization, you can report that back to the people who give the money that that's what a parent asked for. Yes, that's true. This is not the entire thing. That's a good point. For example, if you are at the shoping center and the kid darts away from you, running pellmell out between 16 billion automobiles in Oak Park shopping center or whatever. Time out, right there, wherever. Sit and watch.

Parents: Letting kids walk to school or preschool. Especially when they are doing construction here. It was awful. First of all, if you don't have to park without crossing the street and then, trucks at 12:30 come up and down the hill here and back up...(unintelligible). Some people carpool with four kids and you have this big safety problem right outside here. You don't have to go to any parents for this.

Dennis: One of the things to work on in those kind of settings is to get the teachers to teach the kids to hold someone's hand. If they hold each other's hand it is better than nothing, at least it slows the kids down. Those are issues that we really need to work on, and when I confronted this problem to tell you truthfully, I thought there's a mountain of work to be done. Somebody gave me a little pickhammer and I just took out one rock.

Parent: (unintelligible)...that you always hold the child's hand. Always?

Other parent: I've never held any of mine. Just three boys. No Mom.

Parent: I always did that with Suzanne.

Dennis: You may have to directly reinforce handholding, in some way. If you put the stickers in for holding hands for going across the street and sometimes, there's no hard and fast rule, it may be that one child is so conscientious and so careful that it's O.K., but if I were going to set a rule down, I would err on the side of conservatism and up until 5, I'd hold the child's hand. Maybe going across a very, very quiet street, so quiet that there's one car a day almost. It's interesting, see, these accidents typically occur around people's homes where vehicle traffic is about 30 cars per hour, which is very, very light traffic. They do not happen; we happen to have an anomalous situation in Lawrence, two of the accidents did occur on busy streets, but that's a rare event.

What I'd like for you to do, to show you here, is a rehearsal of how to practice "sit and watch". It is an important thing to do, to expose your child to what is going to happen before it is going to happen, because you will find it to be a lot easier and we get to watch. This is something else.

[VIDEOTAPE STARTS]

[VIDEOTAPE STOPS]

Dennis: What she is doing is making the child assume responsibility for making the judgment of when it is safe to cross. This is an important teaching tool for you because this is what the kid has to learn eventually. You notice she used the phrase, "Tell me when it is safe to cross." The reason for that is very specific: if you use the phrase, "Is it safe to cross?", the child has a 50-50% chance of being right; and not really knowing what the situation is. Tell me when is a much more open-ended question and the child has to look, they have to make some process judgment about whether or not cars are coming.

Very often we tend to stress the thing of stopping at the curb and looking right and left. Those are important but the hardest thing for the child to learn is the closing-gap of the vehicles. That is what this is designed to stress, that little exercise.

I can report anecdotally that the little three-year old boy recently saved their lives, or at least saved them from some injury. He and his mother were walking to work with the older boy you saw earlier. They were getting ready to cross the street, and the older boy said it was safe to cross, and they just started across the street, and the littlest one said, "Mommy! STOP! There's a car turning!" And there was a big truck turning.

He had acquired this through this little exercise of asking when it is safe to cross. We were very encouraged by that episode. They have been doing this for six months, and any time you go downtown or any place you can begin to do this. It will probably take six months to a year for a child to reliably and carefully do this. And that is the question. They have to be 100% correct. There is no margin of error. A little booklet or pamphlet isn't going to cut the mustard with the kid; they have to have lots of practice. One of the things you might do sometime is on a busy street is stand with your child. You can just stand back. You don't actually have to cross; you can just keep asking the question, "Tell me when it is safe to cross. Tell me when it is safe to cross." That's a nice thing. Let's watch now, a rehearsal with the little boy about going to "sit and watch" because this is something you should probably do.

[VIDEOTAPE STARTS]

[VIDEOTAPE STOPS]

Dennis: That is almost exactly how a kid is going to do it. They will get off and ask you about anything, everything under the sun, the pitter-patter of the instruction about it. You need to do this several times before you ever do it so that the child really understands. It will minimize the hassle. The temper tantrum that is likely to occur. It will not necessarily prevent it from occuring that first time it happens.

One thing you also need to know is to keep the time short probably 3 minutes or 2 1/2 minutes for younger children and 5 minutes for someone up to about 5. If it is long, it loses its effectiveness. The child kind of spaces out and begins to do other things, and it doesn't work anymore. Short time is apparently best.

If the child tantrums, during "Sit and Watch", you say, "O.K., if you are going to yell and kick and throw things, or whatever the case may be, two sit and watches." Then you set the timer for the 5 minutes or 3 minutes and it rings. Then you set it again. The timer has to ring twice. So the kid knows it is two sit and watches. It makes it seem more like there is an end to it because one of the things, if it gets too long, children don't see an end and that's when they get wildly inappropriate, because they think they've just been glued to this place for the rest of their mortal lives. And they would like to escape naturally, so...

What I would like to do now just briefly is to pair up and try this rehearsal with one another and so you practice just as if, Gail, you practice with Tony doing that which you saw on the video tape in a rehearsal strategy with Suzanne. You don't need to be wildly inappropriate. Tony, you can play Suzanne, and you can exchange roles. Gail will be Meredith. (laughter). This gives you a chance to work out the thing. Sue and Jeanette, and Beth and Ken. I'll kind of kibbitz.

[unintelligible conversation among participants, laughter, etc.]

This is explaining the new thing. Explaining the new thing, not doing the practice time out. That would be a different thing. Just explaining the new rule. And you can be mildly, as the child, mildly distracted, as Ben was.

Parent: (unintelligible)...something about Jonathan in seat belt. Jonathan, if you go through the windshield, you are going to crack your head open. (unintelligible)... Fair to use scare tactics?

Dennis: I'm not sure. And let me tell you both ways. It could be helpful and it could not be helpful. It could be helpful in the sense that fear-provoking,anxiety-provoking. You want to avoid that kind of circumstance, and there is some of that kind of thing, like in our storybooks, we show the ball getting smashed or squished. But we don't show the kid getting squished. We show the bigwheel getting its wheel knocked off. Partly because children don't understand consequence very well.

On the other hand, it could be that by doing that sort of stuff, it never happens. Basically, in most children's lives, it doesn't happen. So what you do is you turn out to be mom and dad and people who write storybooks are liars and so you just sold me a short bill of goods, person; and I'm just going to go right ahead and do what I wanted to do anyway.

Parent: My oldest one, when he was 3 or 4, (unintelligible), we walked out into the street and showed him what the impact of a squirrel and a car was. (unintelligible)...

Dennis: That was a fortuitous, natural event that would be useful to demonstrate reality. What may be the problem is in verbal things, that it may not seem real to the child. I don't know definitely the answer to that questions. It's the one that I'm dying to find out (pardon the pun).

Parent: (unintelligible)...real accident...run over...I don't think the child died...emergency room...

Dennis: I think it is probably better in most cases to do it in a more subtle way. You could get hurt. Telling the child you could die is a meaningless thing to a kid,.they don't understand that. I am kind of ambivalent about it partly because of from the adult safety literature threats of death, destruction, mental retardation, have no effect on people'e safety-related behavior. You have to show them more the benefit part and maybe a little bit of the negative and that's kind of what we have tried to stress here with the positive and a little bit of the negative.

Parent: (unintelligible)...I have the same problem. What I do, wherever I am with Meredith, I just stop the car and sit there and just sit there, completely stop.

Dennis: It works.

Parent: (unintelligible)...several talking at once.

Parent: I just stepped on the brake just a little bit to make her jolt a little bit and that really made an impression. She wasn't hurt.

Dennis: A realistic demonstration. I want to hear everybody do their rehearsals.

...

[unintelligible]

Dennis: You can manage it. You define your boundaries and what would happen.

[conversat]

Dennis: Redefine it, yes, exactly.

[conversation
several rehearsals going on at once]

Dennis: Nice rationalization about the trees and all that kind of stuff.

[continuation]

Dennis: That's a good point. When you talk about curbs, I prefer not to even mention the existence of a curb. A curb is part of the street...fall off. If you just define it as beyond the sidewalk. That thing that comes up is off limits. That's the street. You can even, you can say, this is the street. Point it out to the child.

Parent: Street is where cars drive, sidewalk...

[continuing conversation]

Dennis: You can also time out tricycles. That's another thing to do. That's good. I think probably the same thing works there not for the same 3-5 minutes, in time out, in sit and watch, and then they get a chance to come back to it, and they work on it.

Parent: What about the older kids out there playing, in the alley?

Dennis: You may want to call it the street. You may want to eliminate it as the alley until he is a little older.

Parent: (unintelligible)...discussion of alley

Dennis: That will make it better; that's good.

[Conversation between two parents]

Dennis: You two have a similar problem.

Parent: This kid was allowed to go up and down; I still wouldn't allow my child...unintelligible.

Dennis: Nobody had a temper tantrum that I saw.

[unintelligible conversation]

Dennis: Let's come back and we'll kind of wrap everything up a little bit.

One of the points that came up that I think was very nice about your discussion is that thing about the curb. We may want to mention that. You initially do not want to acknowledge the existence of the curb as a separate entity to your child, because what happens is you get a kind of testing the limit kind of thing walking right up there. So the thing to do when you explain this show your child what the physical boundaries are. Say that the curb is the street. You touch the curb, bang, sit and watch. This business of walking along the curb is a dangerous thing because the child could fall, or get pushed, or it is just too close.

Parent: Playing on the playground, you are going to go home. You just take the child's hand in the middle of the playground, rather than waiting.

Dennis: I would start some ways back from the street, holding the hand. That would probably be more advisable. Then, slowly, you should be able to be 30 feet back or 100 feet back, but just before you get there. One of the programs that we want to work on is to teach the child to request to hold your hand just like we have taught them to avoid the street. That's a way aways, unfortunately. Those storybooks took us a while to put together.

Parent: One thing that has worked pretty well. I try to discourage ball playing in the front yard. Or, partly because we are on a hill. Trucks on a driveway, sloping down. That's a long way.

Dennis: That's a good point. You have to analyze your own environment. Maybe adjust your child's play to where it is less likely to cause a problem. In a sense we can't put our children in a glass bottle and screw the lid on and keep them from any hazard for the rest of their lives, but just being a little more observant and structuring play with the ball, for example, is a good idea.

You might practice one of the things we talked about; you might practice playing baseball in the front yard, or kickball. You might practice this thing of letting the ball go into the street and say what you do, and reinforcing that.

Parent: You know what my primary concern about that was. I don't know what my child might do in somebody else's yard. Their rules are different.

Dennis: You may have to teach some coping skills here.

Parent: Whatever else someone else does may not be O.K. with me. That's them. Not me..

Dennis: That's a good point. We used this program. Sure. (interruption).

One of the parents in a previous study had been through the parent program. They spontaneously started using these procedures with their child and we were observing the child's safe play. That child we have seen for probably, anecdotally for maybe 2 years, and we knew from our own factual observatons that his rate of play in the street was close to 25 times per hour and about 50% of the time. Within two days of putting this program into effect that rate fell to virtually 0.

Parent: How old was he?

Dennis: 3, just 3.

Now, 5 months later, I have also had a chance to observe the child intermittently, on and off. I have watched when the whole neighborhood has been out in the street, every other kid in the block, and he will stay in his yard. He will not go out in the street. So it can be done.

I wish I could tell you more about all the things that could be done and how to do them. In a year or two maybe I could do that. This is the first part.

This is probably the major problem with a young child that you have to focus with--eliminating the dashing into the street, the playing, and so on.

There are some other things you might want to teach your child, to prompt them. When your child goes to a new place, prompt the child to ask where it is safe to play and define all these new boundaries because sidewalks and grass are generally safe. In some places they may be safe and in other places, the sidewalk adjoining 23rd Street (a busy, through street), is not a safe place to play. That one time that you might go into the street, out of the whole week, or day, might be the last time. What I hope we can do here is give you some peace of mind, by putting these procedures into effect.. Reduce the frequency and the occurrence and thereby make you feel more comfortable about your child's safety.

Maybe we need to talk about any specific problems and adaptations you might have? In your own situation?

Parent: Say your child is playing with a frisbee, or a ball, and it goes into the street, and they come up to you and say the ball is in the street. You go out holding their hand, asking is it safe? to retrieve it?

Dennis: You could go out there by yourself or with the child.

Parent: That request to the child, is it safe, is good because it makes them responsible for their own actions... Kids are not responsible enough at that age, where I think kids are responsible if we show them actions... If they get hit by a car, (unintelligible)... That gives them confidence.

Parent: Why are we saying not to go in the street if we are going to take them by the hand into the street? Wouldn't that get them confused? ...

Dennis: There is a time when it is O.K. to go into the street: only with a big person holding your hand. That is the only time. That's what we have taught in the books. You have to negotiate streets. To say never go in the streets, never ever go in the streets, that's not true. Only when you ard holding a big person's hand; mommy's or daddy's hand, etc. We use the phrase big person in the book because not all children have mommies, not all children have daddies. We only ask if Mommy is a big person, if Daddy is a big person. Things like that. Is that still confusing?

Parent: No, it is not. If something went into the street, I guess as you say, that day she would finally know that she doesn't go into the street. She would get me. (unintelligible)...

Dennis: The stray toy thing, that is not a common occurrence. More typically what I have seen with children is that they just kind of walk into the street or that they just ride into the street. But the rolling ball or the trike that slides down the hill is a different kind of thing. You needn't in the case, if you wanted to be more conservative with your child, you needn't go in the street with your child to fetch the toy. You can just yourself go in and limit your occasions of going into the street with your child to the purposeful things you do when you are downtown crossing the street, at the supermarket or wherever you go, crossing the street at the neighbor's or whatever, and limiting it to those occasions. So that you wouldn't have that confusion. Other questions?

Parent: What about this program with my 2 year old?

Dennis: If you do it with a child who is just 2, it has to be much higher rate of praise. Very short durations. I don't think the child would handle the storybooks too well. You can certainly use your praise statements, and the kind of things that little kids like and use the sit and watch, and timeout, or whatever you use. As your child grows a little older and gets better verbal command and understands the world a little better, I think you could have the other complements to it. In 2 or 3 weeks you ought to be able to be rid of the charts and stickers.

Parent: Did you make the comment earlier about the fact that when you are not with your child, someone else is...you just tell them what the rules are and not worry about them using the chart or whatever.

Dennis: It depends on your situation. If your sitter person is pretty good, you might give them a few stickers to use.

Parent: (unintelligible).

Dennis: Oh, no, it is not going to collapse. You might have, your major danger might come about if your sitter person allows the child to go into the street. Then you might have a problem. If there is a little backsliding, reduce the time requirements initially and move them quickly back up, so that your child gets right back into the system.

Parent: (unintelligible)

Dennis: You can't insist that they use the chart and everything. But, you can say, "I don't want my child to go into the street and if my child does, then this is what you can do. Please tell me child when he or she is doing a good job." You can specify that. You can't guarantee that. A good child care person is hard to come by. There is always ambiguity in the world. You just have to adapt to that a little.

I will be asking you all to fill out a little evaluation form on the workshop. I didn't ask you to do that today because you may go home and try some of these things and see what the problems were, which won't appear until you have a chance to try it and reflect on it a little bit. I'm not sure if that is an accurate assessment, but you might just candidly if you have some suggestions at this point suggest some things for improving the quality and content of the workshop. I'd appreciate it if you have some ideas. Or you can wait and fill out your form...